

## **APPENDIX A-I**

### **ACTS OF AUTHORITY AND MANDATES FOR THE BUREAU OF LAND MANAGEMENT**

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#### **BACKGROUND ACTS**

A series of statutes establish and define the authority of the Secretary of the Interior to make decisions regarding fluid minerals leasing and development. The major relevant statutes are briefly described below, and the subsequent permit and approval requirements are summarized in Table A-1 (at the end of Appendix A-I).

#### **General Mining Law of 1872 (later amended by the Mineral Leasing Act of 1920)**

Public land valuable for oil deposits were open to entry and placer mining claims under the General Mining Law (see Act of February 11, 1872, 29 Stat. 526). The General Mining Law of 1872 (30 USC 22-54) governs mining activity on public land. So many claims were filed under the General Mining Law that the President issued a Proclamation in 1909 withdrawing public land from such entry, pending the enactment of legislation to protect such land (see *U.S. v. Midwest Oil Co.*, 59 L.Ed. 673 [1915], and *Udall v. Tallman*, 13 L.Ed. 2d 616, 628 [1965]). However, protective legislation was not enacted until the Mineral Leasing Act of 1920 (see *Boesche v. Udall*, 373 US 472, 10 L.Ed. 2d 491, 497 [1963]). This Act established a leasing system for the acquisition of certain minerals (currently applies to coal, phosphate, sodium, potassium, oil, oil shale, gilsonite, and gas).

#### **Mineral Resources on Weeks Law Lands**

The Act of March 4, 1917 (39 Stat. 1150, as supplemented; 16 USC 520) authorizes the Secretary of the Interior to prescribe general regulations to permit prospecting, development, and use of the mineral resources of the lands acquired under the Act of March 1, 1911, known as Weeks Law, for the best interests of the United States.

#### **ACTS OF AUTHORITY**

#### **Mineral Leasing Act of February 25, 1920**

This Act is the primary authority under which the Federal government leases the majority of Federal onshore minerals. The Bureau of Land Management (BLM), Department of the Interior, is responsible for leasing under this Act. Technical administration of leases and permits is the responsibility of the U.S. Geological Survey. Certain lands are closed to leasing in Section 43 (30 USC 226-3).

## **Mineral Leasing Act for Acquired Lands of August 7, 1947**

The Mineral Leasing Act (Ch. 513, 61 Stat. 913; 30 USC 351, 352, 354, 359) provides that all deposits of coal, phosphate, oil, oil shale, gas, sodium, potassium, and sulphur that are owned or may be acquired by the United States and that are within the lands acquired by the United States may be leased by the Secretary of the Interior under the same conditions as contained in the leasing provisions of the mineral leasing laws. No mineral deposit covered by this section shall be leased except with the consent of the head of the Executive Department, independent establishment, or instrumentality having jurisdiction over the lands containing such deposit, or holding a mortgage or deed of trust secured by such lands that is unsatisfied of record, and subject to such conditions as that official may prescribe to ensure the adequate use of the lands for the primary purposes for which they have been acquired or are being administered.

## **The Federal Onshore Oil and Gas Leasing Reform Act of December 22, 1987**

The 1987 Leasing Reform Act (30 USC 181, et seq.; PL 100-203) requires the BLM to offer all lands available for leasing competitively prior to leasing noncompetitively and adds environmental provisions to the leasing process. The Act was a response to concerns that leasing often was occurring at below-market rates and to concerns about environmental protection. The Act also provides for inspections and enforcement of operations once commenced. In addition, the BLM is required to have the consent of the Forest Service before leasing oil and gas on Forest Service lands. Regulations implementing this statute were published in the *Federal Register* on March 21, 1990 (55 FR 10423, et seq.), and the regulations were codified in 36 CFR 228.100 et seq. Onshore oil and gas leasing and operations regulations are provided in 43 CFR Part 3100 et al.

## **Onshore Oil and Gas Leasing and Operations: Proposed Rule (43 CFR Part 3100, et. al.)**

The BLM is proposing to revise its Federal oil and gas leasing and operations regulations (*Federal Register*, December 3, 1998). The proposed rule, as published, uses performance-based standards in certain instances in lieu of the current prescriptive requirements. BLM's onshore orders and national notices to lessees would be incorporated into these regulations to eliminate overlap with existing regulations. Also, the rule is intended to eliminate redundancies, clarify procedures and regulatory requirements, and streamline processes. Subpart 3104 of the proposed rule states that the BLM can include stipulations restricting surface use on leased land, or restrict the use of the lease after issuance through conditions of approval in order to protect environmental quality and resources, threatened or endangered species, cultural or historic resources, or private or other rights when the surface area is not managed by the BLM. Conditions of approval may include measures to modify the location or design of proposed operations, restrict timing of surface disturbance, or interim and final mitigation. Subpart 3120 discusses public land available to leasing. Recreation and Public Purpose land is subject to oil and gas leasing under stipulations, if appropriate. It should be noted that the proposed rule was

published in the *Federal Register* for review and comment by the public, and is subject to revision prior to becoming final.

### **Geothermal Steam Act of 1970**

This Act (30 USC 1001 et seq.) gives BLM the authority to issue leases for the development of geothermal resources on Federal lands, given the assurance that the land may continue to be used adequately for the purposes for which it was withdrawn or acquired. Subsequently (in 1975 and 1977), Geothermal Resources Operational Orders 1-6 were issued under the Act by the U.S. Geological Survey Conservation Division. The orders provided direction for exploratory operations; drilling, completion, and spacing of geothermal wells; plugging and abandonment of wells; general environmental protection requirements; pipelines and surface production facilities; and production and royalty measurement, equipment, and testing procedures.

### **Geothermal Resources Leasing and Operations: Final Rule (43 CFR Part 3200, et al.)**

A final rule issued in September 1998 amends the regulations that implement the Geothermal Steam Act of 1970 (*Federal Register*, September 30, 1998). The final rule revises 43 CFR parts 3200, 3210, 3220, 3240, 3250, and 3260, which implement the classification, leasing, exploration, drilling, and utilization requirements of the Act. These regulations affirmed that the BLM may issue geothermal leases on land administered by the Department of the Interior including public, withdrawn, and acquired lands; lands administered by the Department of Agriculture with their concurrence; lands conveyed by the United States government wherein geothermal resources were reserved to the United States; and lands subject to Section 24 of the Federal Power Act as amended (16 USC 818) with concurrence from the Secretary of Energy. The BLM cannot issue leases for land on which the Secretary of the Interior has determined the issuance of the lease could cause unnecessary and undue degradation of public land and resources; lands administered by the National Park Service or a National Recreation Area; lands where it is determined that a lease is likely to result in a significant adverse effect on a significant thermal feature within the National Park System (if activities resulting from a lease might result in such an effect, the BLM will include stipulations to protect the feature in the lease or permit); wildlife management areas or hatcheries administered by the Department of the Interior; or Indian trust or restricted lands.

## **MANDATES AND GUIDANCE FOR PLANNING AND ENVIRONMENTAL RESOURCES MANAGEMENT**

### **Federal Land Policy and Management Act of 1976**

The Federal Land Policy and Management Act (FLPMA) (43 USC 1700; et. seq.) and its implementing regulations define principles for management of public land and their resources. This Act directs the Secretary of Interior to develop, maintain, and when appropriate, revise land use plans that provide for the management of public land based on the principles of multiple use and sustained yield unless otherwise specified by law.

### **National Environmental Policy Act of 1969**

This statute (40 USC 4331 et. seq.) and its implementing regulations (40 Part 1500) apply to all Federal actions including oil and gas leasing. This statute requires the Federally authorized officers in Federal agencies to perform environmental analysis and disclose the effects of their decisions on the quality of the human environment. The law further requires the Federal officers to identify and describe the significant environmental issues associated with their decisions, the proposed action and alternatives to the proposed action (including the alternative of no action) and identification of the effects of all alternatives on the environment. Federal officers must disclose the direct, indirect, and cumulative effects of the decisions, and adverse environmental effects that cannot be avoided, the relationship between short-term uses of the human environment and the maintenance of long-term productivity, and any irreversible or irretrievable commitments of resources made by the decision. Drilling on fluid mineral leases is evaluated on a case-by-case basis as part of the National Environmental Policy Act (NEPA) process.

### **The Clean Air Act of 1970**

The Clean Air Act (91 Stat. 685; 42 U.S.C. 7401 et. seq.) provides that each state is responsible for ensuring achievement and maintenance of air quality standards within its borders so long as such standards are at least as stringent as Federal standards established by the U.S. Environmental Protection Agency (EPA).

### **The Endangered Species Act of 1973**

The Endangered Species Act (PL 93-204; 16 USC 1531, et. seq.), as amended, requires special protection and management on Federal lands for threatened or endangered species. The U.S. Fish and Wildlife Service (FWS) is responsible for administration of this Act. Federal agencies proposing an action or processing an action proposed by a third party that “may affect” the existence of an identified species must consult with the FWS to determine if, and how, the proposed action would affect those

species. Mitigation measures are developed through the consultation process and are put forth as suggested conservation measures included in a formal FWS Biological Opinion as to whether or not the proposed action would jeopardize the continuous existence of any officially listed endangered or threatened species.

### **Clean Water Act**

The Federal Water Pollution Control Act Amendments (PL 92-500, 86 Stat. 816, as amended; 33 USC 1251, et seq) put forth national standards to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Upon passage of Environmental Quality Acts and adoption of water quality standards, state agencies are empowered to enforce water quality standards as long as they are at least as stringent as Federal standards established by the EPA.

Also, Section 404 of the Clean Water Act, administered by the U.S. Army Corps of Engineers, requires that waters of the United States be protected by permits prior to dredge or fill activities occurring in such areas. Waters include intermittent streams, mud flats, and sand flats. Wetlands that meet jurisdictional criteria of Section 404 of the Clean Water Act are partially protected by the requirement of a permit prior to any dredge or fill activity occurring in such areas.

### **Historic Preservation Act of 1966**

Section 106 of the National Historic Preservation Act (Public Law 89-665, 80 Stat. 915 [16 USC 470] as amended) requires that Federal agencies undertaking or funding projects consider the effects of proposal actions on historic resources eligible for or listed on the National Register of Historic Places regardless of land status. Regulations for *Protection of Historic Properties* (36 CFR Part 800) defines the process for demonstrating such consideration through consultation with State Historic Preservation Officers, the Federal Advisory Council on Historic Preservation, and other interested parties.

### **Energy Policy Act of 1992**

The Energy Policy Act of 1992 (PL 102-486) addresses a broad range of energy issues, including energy efficiency and alternative fuel programs. Under this Act, the primary term of competitive leases was changed from 5 to 10 years.

### **BLM Manual Section 1624-2**

BLM Manual Section 1624-2, Supplemental Program Guidance for Fluid Minerals, requires that fluid minerals determinations be included in every resource management plan prepared by BLM. The manual

also identifies factors that should be analyzed and considered in making fluid minerals determinations. BLM Handbook H-1624-1, Planning for Fluid Minerals Resources, provides direction for preparing the appropriate documentation for complying with the Supplemental Program Guidance.

### **Existing Management Direction in BLM's Decision Area**

Specific to BLM's Decision Area, the BLM has prepared environmental and planning documents to address and direct fluid minerals leasing. The Environmental Assessment for Oil and Gas and Geothermal Leasing in the White Sands Resource Area (BLM 1981a) identified areas regionally where potential resource conflicts were significant enough to either preclude leasing or restrict lease operations. The mitigating measures developed from the Environmental Assessment (EA) were intended to be attached to leases as special stipulations. Other lease stipulations were developed for a statewide project conducted by the BLM New Mexico State Office (May 1982) and created provisions protecting soil resources from initial operation through final reclamation of lease surfaces. Plan documents including the White Sands Resource Management Plan (BLM 1986a) and the Otero County Area of Critical Environmental Concern Resource Management Plan Amendment (BLM 1997b) provide direction for fluid minerals management.

Also, the *Proposed Statewide RMPA/FEIS - New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management* was released in January 2000. The Proposed RMPA/FEIS documented the effects of adopting standards for public health and guidelines for livestock grazing management on BLM-administered public land in the State. The standards describe conditions needed for health-sustainable public rangelands and provide the measure of resource quality, condition, and function upon which the health of public land will be assessed. Changes to existing grazing practices may result to attain the new standard public land health, based on the need to retain the integrity of the soil and the continued sustainability of ecological processes. The Record of Decision for this project was signed April 5, 2000. Following the signing of the Record of Decision, the standards and guidelines were sent to the Secretary of the Interior for review and approval.

### **Onshore Oil and Gas Orders No. 1 and No. 2**

Onshore Oil and Gas Orders No. 1 and No. 2 are authorized under 43 CFR Parts 3160 and 3180, and provide uniform national standards for performance and operations when conducting oil and gas exploration and development on public land. Onshore Order No. 1 requires conformance with Federal and State laws and regulations and ensures environmental safeguards, public health and safety, and proper reclamation of disturbed lands. Order No. 2 establishes specific requirements and standards for operation and equipment. (Refer to Proposed Rule 43 CFR Part 3100, et. al. above.)

## **Executive Orders 11988 and 11990**

Executive Orders 11988 and 11990 place restrictions on government approval of construction activities in wetlands and floodplains, and require consideration of wetland and floodplain impacts in all documents prepared in compliance with NEPA.

## **NEW MEXICO STATE STATUTES**

The following State statutes may not apply to the BLM, but generally are relevant to fluid mineral development in the State of New Mexico.

### **New Mexico Oil and Gas Act**

The New Mexico Oil and Gas Act (Chapter 70, Article 2 NMSA 1978) establishes procedures for leasing, royalties, and operations for the oil and gas industry. The Act also created the Oil Conservation Commission and provided it the jurisdiction and authority over all matters relating to the conservation of oil and gas and prevention of waste of potash as a result of oil and gas operations in the State of New Mexico. Permitting is administered through the Oil Conservation Division of the Energy, Minerals, and Natural Resources Department.

### **New Mexico Geothermal Resources Act**

The New Mexico Geothermal Resources Act (Chapter 75, Article 15 NMSA 1973) regulates the development of geothermal resources on State lands. It includes leasing procedures, royalty rates, and leasing terms.

### **New Mexico Geothermal Resources Conservation Act**

The New Mexico Geothermal Resources Conservation Act (Chapter 71, Article 5 NMSA 1978) is intended to ensure that geothermal resources are developed efficiently while safeguarding public health and natural resources. The Act provides the authority to the Oil Conservation Commission and the Oil Conservation Division of the Energy, Minerals, and Natural Resources Department to administer it.

### **State Cultural Properties Act of 1977**

The State Cultural Properties Act requires that survey work for archaeological sites be conducted prior to any development of State or Federal lands. The Act provides the authority to grant archaeological permits to the State Archaeologist.

### **New Mexico Water Quality Act**

The New Mexico Water Quality Act (Chapter 74, Article 6 NMSA 1978) allows for water pollution control problems to be established by the Water Quality Control Commission. Permitting and other regulatory authority for these programs may fall under the jurisdiction of the Environmental Improvement Division of the New Mexico Health and Environment Department, the Oil Conservation Division, or the State Engineer's Office, depending on the nature of the water used and method of discharge.



**TABLE A-1**  
**MAJOR FEDERAL, STATE, AND COUNTY AUTHORIZING ACTIONS<sup>1</sup>**

| <b>Agency and Permit/Approval</b>                                   | <b>Nature of Action</b>  | <b>Authority</b>   | <b>Application</b>                                |
|---|--|--|---|
| <b>Federal Permits, Approvals, and Authorizing Actions</b>          |  |  |   |
| <i><b>BLM</b></i>   |  |  |   |
| Decision Record for proposed action                                 | Evaluate environmental impacts of proposed action  | NEPA   | Proposed Federal action                           |
| Permit to Drill   | Provide for compliance with regulations and requirements during drilling and completion phases of the well | Mineral Leasing Act of 1920; Federal Oil and Gas Royalty Management Act of 1982; Secretarial Order No. 3087; Amendment No. 1, February 7, 1983 | Proposed injection wells and gas production wells |
| Rights-of-way   | Grant right-of-way and potentially evaluate the environmental impacts of proposed action                   | NEPA, FLPMA, Mineral Leasing Act of 1920   | Pipeline, electrical lines, access roads          |
| Notice of Intent to conduct geophysical exploration                 | Protect resource values during geophysical exploration activities  | FLPMA, Mineral Leasing Act of 1920   | Proposed action                                   |
| Approval to dispose of produced water                               | Controls disposal of produced water from Federal leases  | Mineral Leasing Act of 1920  | Well  |
| Permit to use earthen pit (part of Application for Permit to Drill) | Regulates reserve pits on drilling locations   | Mineral Leasing Act of 1920  | Well  |
| Authorization for flaring and venting of gas                        | Regulates flaring and venting of gas   | Mineral Leasing Act of 1920  | Well testing and evaluation                       |
| Temporary abandonment of a well                                     | Regulates temporary abandonment of wells   | Mineral Leasing Act of 1920  | Successful well                                   |
| Plugging and abandonment of a well                                  | Establishes procedures for permanent abandonment   | Mineral Leasing Act of 1920  | Dry hole  |

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| <b>Agency and Permit/Approval</b>  | <b>Nature of Action</b>  | <b>Authority</b>   | <b>Application</b>   |
|--|--|--|--|
| <b><i>U.S. Army Corps of Engineers</i></b>   |  |  |  |
| Section 404 permit   | Issue a permit for placement of fill or dredge materials in waters of the United States or adjacent wetlands | Section 404, Clean Water Act   | Pipeline; proposed actions in waters of the United States  |
| <b><i>U.S. Fish and Wildlife Service</i></b>   |  |  |  |
| Consultation process, threatened or endangered species   | Review potential impacts on Federally listed and candidate threatened and endangered species                 | Section 7 of the Endangered Species Act  | Federal action   |
| <b><i>EPA</i></b>  |  |  |  |
| (Administered by New Mexico Water Quality Control Commission) Stormwater discharge permits (National Pollutant Discharge Elimination System permits) | Regulate discharge to surface waters from point sources  | Federal Water Pollution Control Act Amendments and Section 404(p) of Clean Water Act   | Construction activities disturbing five or more acres (As of 01/26/02, the acreage will be reduced from 5 or more to 1 acre) |
| Permit for approval to dispose produced water (also must be approved by the surface management agency)   | Issue permit to allow underground injection of produced water  | Federal Safe Drinking Water Act, 40 CFR Parts 144 and 147  | Underground injection control  |
| (Administered by the Oil Conservation Division of the New Mexico Energy and Minerals Department) Underground Injection Control permit                | Ensure potable aquifers are not adversely affected by injection of produced water                            | Federal Safe Drinking Water Act Underground Injection Control program (40 CFR Parts 144 and 146.22 and 40 CFR Parts 100 to 149, July 1, 1991 revision) Onshore Order No. 7 | New injection well   |
| Spill prevention, control, and countermeasure plan   | Pollution control  | 40 CFR Part 112  | Drilling operations  |

**TABLE A-1**  
**MAJOR FEDERAL, STATE, AND COUNTY AUTHORIZING ACTIONS<sup>1</sup>**

| <b>Agency and Permit/Approval</b>  | <b>Nature of Action</b>                                   | <b>Authority</b>   | <b>Application</b>  |
|--|---|--|---|
| <b>State or Local Permits, Approvals, and Authorizing Actions</b>                                |   |  |   |
| <i>New Mexico State Historic Preservation Officer</i>  |   |  |   |
| Cultural resource clearance  | Review and consultation                                   | Historic Preservation Act of 1966, State Cultural Properties Act of 1977           | All proposed action components  |
| <i>New Mexico State Engineer's Office</i>  |   |  |   |
| Permit to appropriate groundwater within declared groundwater basins                             | Regulate groundwater use, permit for water wells          | New Mexico Oil and Gas Act; New Mexico Geothermal Resources Act; Water Quality Act | All well development  |
| <i>New Mexico Energy, Minerals, and Natural Resources Department - Oil Conservation Division</i> |   |  |   |
| Permit to drill, re-enter, deepen, plugback, or add a zone (Form C-101)                          | Permit new wells  | New Mexico Oil and Gas Act; New Mexico Geothermal Resources Act                    | New well development  |
| Request for allowable and authorization to transport oil and natural gas (Form C-104)            | Permit new wells  | New Mexico Oil and Gas Act; New Mexico Geothermal Resources Act                    | New well development  |
| Spill report   | Notification of fire, breaks, leaks, spills, and blowouts | OCD Rule 116   | In the event of fire, breaks, leaks, spills, and blowouts at drilling operations              |
| <i>New Mexico Environmental Department - Air Quality Division</i>                                |   |  |   |
| Air emission permits   |   |  | Combustion sources, compressors, volatile chemical handling, storage piles, and storage tanks |

**TABLE A-1**  
**MAJOR FEDERAL, STATE, AND COUNTY AUTHORIZING ACTIONS<sup>1</sup>**

| <b>Agency and Permit/Approval</b>   | <b>Nature of Action</b>  | <b>Authority</b> | <b>Application</b> |
|---|--|------------------|--------------------|
| <i>Sierra and Otero Counties</i>  |  |                  |                    |
| May require road use permits  | Permits for the use of overweight or overlength trucks on county roads |                  |                    |
| Some sites may be associated with zoning codes or building code standards |  |                  |                    |

<sup>1</sup>This list is not necessarily all-inclusive. It is the responsibility of the operator to ensure that all permits and approvals are secured before a project may proceed.

## **APPENDIX A-II**

### **LEASE ISSUING PROCESS**

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#### **INTRODUCTION**

Exploration for resources is costly and speculative. Companies must commit costly equipment, purchase a variety of land rights, and use expensive environmental protection technologies to begin exploratory drilling. Driven by pressures to be efficient and minimize risk, the nature of the enterprise has evolved over decades into a form in which exploration and development requires long-term planning by many loosely associated, mutually dependent industries. There is no guarantee that the expensive commitment of exploratory resources will result in a discovery.

Consequently, companies or individuals pursuing fluid minerals must be able to plan in advance to use their exploratory resources most efficiently. One tactic they rely on to stage commitments of their own resources is the purchase of public land leases. Developers want to know what lands are available for exploration and development and they want to be assured of continued future opportunities. Leasing of public land is a way to do this.

#### **LEASE**

A lease is (1) a contract in legal form that conveys to an operator the right to develop and produce fluid minerals for a specific period of time under certain agreed upon terms and conditions and (2) the tract of land, on which the lease has been obtained, where producing wells and production equipment are located.

Individuals, associations of citizens, and corporations organized under the laws of the United States or any state, are entitled to lease Federal lands for these purposes under authority of the Mineral Leasing Act of 1920, as amended, and by the Mineral Leasing Act for Acquired Lands of 1947 unless the lands have been specifically withdrawn by the Department of the Interior. Leases also may be issued to a legal guardian or trustee on behalf of a minor. Aliens, whose country of origin does not deny similar privileges to United States citizens, may hold interest in leases, but only through stock ownership of United States corporations that hold leases. Aliens may not hold interest in Federal fluid minerals leases through units in publicly traded limited partnerships.

The issuance of a lease grants to the lessee the exclusive right to use as much of the leased lands as is necessary to conduct exploratory drilling and development operations in the leasehold subject to stipulations attached to the lease; restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the surface-management agency's Authorized Officer to minimize adverse impacts on other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed (Application for Permit to Drill [APD]) provided they do not exceed the terms of the lease. To the extent consistent with lease rights granted, such

reasonable measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specifications of interim and final reclamation measures. Measures shall be deemed consistent with the lease rights granted provided that they do not require relocation of proposed operations by more than 200 meters, require that operations be sited off the leasehold, or prohibit new surface disturbing operations for a period in excess of 60 days in an lease year (43 CFR 3102.1-2).

A copy each of Form 3100-11, Offer to Lease and Lease for Oil and Gas, and Form 3200-24, Offer to Lease and Lease for Geothermal Resources, are provided at the end of this appendix.

### **Competitive and Noncompetitive Leases**

Competitive and noncompetitive leases may be obtained for fluid minerals exploratory drilling and development on lands owned or controlled by the Federal government. The Leasing Reform Act of 1987 requires all public lands available for fluid minerals leasing to be offered first by competitive leasing at an oral auction. Noncompetitive leases may be issued only if the competitive process results in no bids. Competitive and noncompetitive leases are issued for a 10-year period. Both are extended for the duration that they are producing fluid minerals in paying quantities. The maximum competitive lease size is 2,560 acres in the "lower" 48 states and 5,760 acres in Alaska. The maximum noncompetitive lease size is 10,240 acres in all states.

### **Competitive Leases**

The Bureau of Land Management (BLM) conducts oral auctions for leases on at least a quarterly basis, when there are available parcels of land. A Notice of Competitive Lease Sale lists lease parcels to be offered at auction. The Sale Notice is published at least 45 days before the date of the auction. The Sale Notice identifies any lease stipulations to uses or constraints on surface occupancy. There are three sources for Federal lands available for lease:

1. existing leases that have expired, and leases that have been terminated, canceled, or relinquished
2. parcels identified by informal expressions of interest from either the public or BLM for management reasons
3. lands included in offers filed for noncompetitive leases (effective January 3, 1989)

On the day of the auction, successful bidders must submit a properly executed lease bid form and make a payment consisting of an administrative fee (\$75 per parcel), one-year advance rental (\$1.50 per

acre), and not less than the \$2.00 per acre minimum bonus. The balance of the bonus bid must be received within ten working days of the auction. The bid form constitutes the legally binding lease offer.

### **Noncompetitive Leases**

Noncompetitive leases may be issued only for parcels that have been offered competitively and failed to receive a bid. Lands in expired, terminated, canceled, or relinquished leases are not available for noncompetitive leasing until they have been offered competitively. After an auction, all lands that were offered competitively without receiving a bid are available for filing of noncompetitive offers for a period of two years.

Noncompetitive offers must be submitted on a BLM-approved form, and include a \$75 filing fee and one-year advance rental (\$1.50 per acre).

Noncompetitive lease offers filed on the first business day following the auction are considered as having been filed simultaneously. The priority among multiple offers received on the first business day for the same parcel are determined by drawings open to the public.

### **Lease Restrictions**

As mentioned above, a lease does not convey an unlimited right to explore or an unlimited right to develop any fluid mineral resources found under the land. Leases are subject to terms and conditions. There are standard lease terms printed on the lease form (Forms 3011-11 and 3200-24) and there are restrictions derived from legal statutes and measures to minimize adverse impacts on other resources and are generally characterized in a lease as stipulations. Stipulations modify the standard lease terms the government grants to a lessee and are known by potential lessees prior to any sale and must be applied at the time of an APD. Standard lease terms and stipulations are described in more detail in Appendix A-V.

## **FEDERAL FLUID MINERALS LEASING - THE STAGED DECISION PROCESS**

The legally required, staged-decision process is designed to accommodate the tentative nature of fluid minerals (in particular, oil and gas) exploration and development.

Purchasing leases does not automatically or immediately result in drilling exploratory wells on these leaseholds. Exploration companies must match geologic characteristics with the commitment of technology, capital, available equipment, and market conditions in a decision to risk a drilling operation. This may result in Federal land leases being bought, relinquished, allowed to expire, or leases may be bought and sold again without ever being drilled upon. This demonstrates a major distinction between

fluid minerals leasing and other activities that are authorized by the BLM. Most activities are reasonably certain to proceed to development after the permit or contract is issued. Although the effects of a typical well in a given location can be estimated on the basis of past experience, there is uncertainty at the time of lease authorization as to whether and when a well will be drilled.

The Federal government wants to respond to industry concerns, but must ensure that future activities will neither unduly harm the environment nor unduly interfere with their mandate of multiple use and sustained yield. A regulatory framework has been created to meet industry's needs while protecting other resources. The regulations include staged permitting of exploration and development. Those stages include public disclosure at the following decision points: (1) determination of lands available for leasing, (2) decision to lease specific lands, (3) APD, and (4) analysis of field development if production is established. The staged process is designed to minimize the risk of making a decision that could lead to undisclosed irreversible or irretrievable environmental impacts. Each decision is based on environmental analysis and disclosure of the probable effects in accord with the National Environmental Policy Act (NEPA). Each decision is appealable to the responsible Federal agency.

### **Lands Available for Leasing**

This stage of the process will be satisfied by the decision resulting from this Resource Management Plan Amendment/Environmental Impact Statement (RMPA/EIS). As required, the decision will identify the lands that are closed to leasing or open for leasing with or without stipulations and how fluid minerals exploration and development activities will be managed to protect other resources on public lands and private lands overlying Federal fluid minerals. The RMPA will direct BLM's fluid minerals program only, but grants no rights to other parties to proceed with fluid minerals activities and does not initiate ground-disturbing activities.

### **Leasing Decisions for Specific Lands**

Regulations require the following before consent can be given for one or more leases to be issued by the BLM:

- # verifying that leasing on the specific lands has been adequately addressed in a NEPA document, and is consistent with the Resource Management Plan (RMP)
- # ensuring that conditions of surface occupancy are properly included as stipulations in resulting leases
- # determining that operations and development could be allowed somewhere on each proposed lease, except where stipulations would prohibit all surface occupancy



### **Application for Permit to Drill**

Subsequent to a lease award, the proposed activities for drilling each well are submitted to BLM for approval by the operator through an APD and Surface Use Plan of Operation (SUPO). The BLM will analyze site-specific environmental effects of the proposed operations and issue a decision document (e.g., environmental assessment).

If modification or changes in the APD are needed, based on drilling conditions encountered or some other unforeseen circumstance, the operator submits a Sundry Notice to the BLM for review and approval. Depending on the extent and nature of the change, additional NEPA analysis may be needed.

### **Field Development Plan**

If economically recoverable quantities of oil and gas or geothermal resources are found through exploratory drilling, industry may submit a field development plan after evaluation of the discovery wells and available geologic information. BLM would analyze the environmental effects associated with the proposed field development and identify reasonable and necessary mitigation measures. Specific well sites and access routes may not be known at the time the field development plan is analyzed. In such cases, additional NEPA analysis, tiered to the field development plan, may be required once a specific well is proposed.

## **IMPACTS OF A LEASE DECISION**

The authorization of a lease grants rights to conduct exploratory drilling and develop fluid minerals within the terms and stipulations of the lease. The exercise of these rights results in environmental effects. The regulations direct the BLM to consider the subsequent actions that would be authorized by a lease, and their potential environmentally disturbing effects, as connected actions. These actions also meet the definition of connected actions in the procedural requirements for NEPA (40 CFR 1502).

These expected actions are the basis of the environmental analysis from which the leasing decisions will be made. The decision on the lands that are available and the subsequent decision authorizing leases, are based upon analysis of the likely environmental effects of the connected actions.

**FORM 3100-11**  
**OFFER TO LEASE AND LEASE FOR OIL AND GAS**

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**OFFER TO LEASE AND LEASE FOR OIL AND GAS**

Serial No. \_\_\_\_\_

The undersigned (*reverse*) offers to lease all or any of the lands in Item 2 that are available for lease pursuant to the Mineral Leasing Act of 1920, as amended and supplemented (30 U.S.C. 181 et seq.), the Mineral Leasing Act for Acquired Lands of 1947, as amended (30 U.S.C. 351-359), the Attorney General's Opinion of April 2, 1941 (40 Op. Atty. Gen. 41), or the

**READ INSTRUCTIONS BEFORE COMPLETING**

1. Name \_\_\_\_\_  
Street \_\_\_\_\_  
City, State, Zip Code \_\_\_\_\_

2. This application/offer/lease is for: (Check only One) ☐ PUBLIC DOMAIN LANDS ☐ ACQUIRED LANDS (percent U.S. interest \_\_\_\_\_)  
Surface managing agency if other than BLM: \_\_\_\_\_ Unit/Project \_\_\_\_\_  
Legal description of land requested: \_\_\_\_\_ \*Parcel No.: \_\_\_\_\_ \*Sale Date (m/d/y): \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

**\*SEE ITEM 2 IN INSTRUCTIONS BELOW PRIOR TO COMPLETING PARCEL NUMBER AND SALE DATE.**

T. \_\_\_\_\_ R. \_\_\_\_\_ Meridian \_\_\_\_\_ State \_\_\_\_\_ County \_\_\_\_\_

Amount remitted: Filing fee \$ \_\_\_\_\_

Rental fee \$ \_\_\_\_\_

Total acres applied for \_\_\_\_\_

Total \$ \_\_\_\_\_

**DO NOT WRITE BELOW THIS LINE**

3. Land included in lease:

T. \_\_\_\_\_ R. \_\_\_\_\_ Meridian \_\_\_\_\_ State \_\_\_\_\_ County \_\_\_\_\_

Total acres in lease \_\_\_\_\_

Rental retained \$ \_\_\_\_\_

This lease is issued granting the exclusive right to drill for, mine, extract, remove and dispose of all the oil and gas (*except helium*) in the lands described in Item 3 together with the right to build and maintain necessary improvements thereupon for the term indicated below, subject to renewal or extension in accordance with the appropriate leasing authority. Rights granted are subject to applicable laws, the terms, conditions, and attached stipulations of this lease, the Secretary of the Interior's regulations and formal orders in effect as of lease issuance, and to regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this lease.

**NOTE:** This lease is issued to the high bidder pursuant to his/her duly executed bid or nomination form submitted under 43 CFR 3120 and is subject to the provisions of that bid or nomination and those specified on this form.

Type and primary term of lease:

THE UNITED STATES OF AMERICA

☐ Noncompetitive lease (ten years)

by \_\_\_\_\_  
(Signing Officer)

☐ Competitive lease (ten years)

\_\_\_\_\_  
(Title) (Date)

☐ Other \_\_\_\_\_

EFFECTIVE DATE OF LEASE \_\_\_\_\_

(Continued on reverse)

4. (a) Undersigned certifies that (1) offeror is a citizen of the United States; an association of such citizens; a municipality; or a corporation organized under the laws of the United States or of any State or Territory thereof; (2) all parties holding an interest in the offer are in compliance with 43 CFR 3100 and the leasing authorities; (3) offeror's chargeable interests, direct and indirect, in each public domain and acquired lands separately in the same State, do not exceed 246,060 acres in oil and gas leases (of which up to 200,000 acres may be in oil and gas options), or 300,000 acres in leases in each leasing District in Alaska of which up to 200,000 acres may be in options; (4) offeror is not considered a minor under the laws of the State in which the lands covered by this offer are located; (5) offeror is in compliance with qualifications concerning Federal coal lease holdings provided in sec. 2(a)(2)(A) of the Mineral Leasing Act; (6) offeror is in compliance with reclamation requirements for all Federal oil and gas lease holdings as required by sec. 17(g) of the Mineral Leasing Act; and (7) offeror is not in violation of sec. 41 of the Act.

(b) Undersigned agrees that signature to this offer constitutes acceptance of this lease, including all terms, conditions, and stipulations of which offeror has been given notice, and any amendment or separate lease that may include any land described in this offer open to leasing at the time this offer was filed but omitted for any reason from this lease. The offeror further agrees that this offer cannot be withdrawn, either in whole or in part, unless the withdrawal is received by the proper BLM State Office before this lease, an amendment to this lease, or a separate lease, whichever covers the land described in the withdrawal, has been signed on behalf of the United States.

This offer will be rejected and will afford offeror no priority if it is not properly completed and executed in accordance with the regulations, or if it is not accompanied by the required payments. 18 U.S.C. Sec. 1001 makes it a crime for any person knowingly and willfully to make to any Department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Duly executed this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_

(Signature of Lessee or Attorney-in-fact)

## LEASE TERMS

Sec. 1. Rentals—Rentals shall be paid to proper office of lessor in advance of each lease year. Annual rental rates per acre or fraction thereof are:

(a) Noncompetitive lease, \$1.50 for the first 5 years; thereafter \$2.00;

(b) Competitive lease, \$1.50; for the first 5 years; thereafter \$2.00;

(c) Other, see attachment, or as specified in regulations at the time this lease is issued.

If this lease or a portion thereof is committed to an approved cooperative or unit plan which includes a well capable of producing leased resources, and the plan contains a provision for allocation of production, royalties shall be paid on the production allocated to this lease. However, annual rentals shall continue to be due at the rate specified in (a), (b), or (c) for those lands not within a participating area.

Failure to pay annual rental, if due, on or before the anniversary date of this lease (or next official working day if office is closed) shall automatically terminate this lease by operation of law. Rentals may be waived, reduced, or suspended by the Secretary upon a sufficient showing by lessee.

Sec. 2. Royalties—Royalties shall be paid to proper office of lessor. Royalties shall be computed in accordance with regulations on production removed or sold. Royalty rates are:

(a) Noncompetitive lease, 12½ %;

(b) Competitive lease, 12½ %;

(c) Other, see attachment; or as specified in regulations at the time this lease is issued.

Lessor reserves the right to specify whether royalty is to be paid in value or in kind, and the right to establish reasonable minimum values on products after giving lessee notice and an opportunity to be heard. When paid in value, royalties shall be due and payable on the last day of the month following the month in which production occurred. When paid in kind, production shall be delivered, unless otherwise agreed to by lessor, in merchantable condition on the premises where produced without cost to lessor. Lessee shall not be required to hold such production in storage beyond the last day of the month following the month in which production occurred, nor shall lessee be held liable for loss or destruction of royalty oil or other products in storage from causes beyond the reasonable control of lessee.

Minimum royalty in lieu of rental of not less than the rental which otherwise would be required for that lease year shall be payable at the end of each lease year beginning on or after a discovery in paying quantities. This minimum royalty may be waived, suspended, or reduced, and the above royalty rates may be reduced, for all or portions of this lease if the Secretary determines that such action is necessary to encourage the greatest ultimate recovery of the leased resources, or is otherwise justified.

An interest charge shall be assessed on late royalty payments or underpayments in accordance with the Federal Oil and Gas Royalty Management Act of 1982 (FOGRMA) (30 U.S.C. 1701). Lessee shall be liable for royalty payments on oil and gas lost or wasted from a lease site when such loss or waste is due to negligence on the part of the operator, or due to the failure to comply with any rule, regulation, order, or citation issued under FOGRMA or the leasing authority.

Sec. 3. Bonds—A bond shall be filed and maintained for lease operations as required under regulations.

Sec. 4. Diligence, rate of development, unitization, and drainage—Lessee shall exercise reasonable diligence in developing and producing, and shall prevent unnecessary damage to, loss of, or waste of leased resources. Lessor reserves right to specify rates of development and production in the public interest and to require lessee to subscribe to a cooperative or unit plan, within 30 days of notice, if deemed necessary for proper development and operation of area, field, or pool embracing these leased lands. Lessee shall drill and produce wells necessary to protect leased lands from drainage or pay compensatory royalty for drainage in amount determined by lessor.

Sec. 5. Documents, evidence, and inspection—Lessee shall file with proper office of lessor, not later than 30 days after effective date thereof, any contract or evidence of other arrangement for sale or disposal of production. At such times and in such form as lessor may prescribe, lessee shall furnish detailed statements showing amounts and quality of all products removed and sold, proceeds therefrom, and amount used for production purposes or unavoidably lost. Lessee may be required to provide plats and schematic diagrams showing development work and improvements, and reports with respect to parties in interest, expenditures, and depreciation costs. In the form prescribed by lessor, lessee shall keep a daily drilling record, a log, information on well surveys and tests, and a record of subsurface investigations and furnish copies to lessor when required. Lessee shall keep open at all reasonable times for inspection by any authorized officer of lessor, the leased premises and all wells, improvements, machinery, and fixtures thereon, and all books, accounts, maps, and records relative to operations, surveys, or investigations on or in the leased lands. Lessee shall maintain copies of all contracts, sales agreements, accounting records, and documentation such as billings, invoices, or similar documentation that supports

costs claimed as manufacturing, preparation, and/or transportation costs. All such records shall be maintained in lessee's accounting offices for future audit by lessor. Lessee shall maintain required records for 6 years after they are generated or, if an audit or investigation is underway, until released of the obligation to maintain such records by lessor.

During existence of this lease, information obtained under this section shall be closed to inspection by the public in accordance with the Freedom of Information Act (5 U.S.C. 552).

Sec. 6. Conduct of operations—Lessee shall conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual, and other resources, and to other land uses or users. Lessee shall take reasonable measures deemed necessary by lessor to accomplish the intent of this section. To the extent consistent with lease rights granted, such measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorize future uses upon or in the leased lands, including the approval of easements or rights-of-way. Such uses shall be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessee.

Prior to disturbing the surface of the leased lands, lessee shall contact lessor to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary. Areas to be disturbed may require inventories or special studies to determine the extent of impacts to other resources. Lessee may be required to complete minor inventories or short term special studies under guidelines provided by lessor. If in the conduct of operations, threatened or endangered species, objects of historic or scientific interest, or substantial unanticipated environmental effects are observed, lessee shall immediately contact lessor. Lessee shall cease any operations that would result in the destruction of such species or objects.

Sec. 7. Mining operations—To the extent that impacts from mining operations would be substantially different or greater than those associated with normal drilling operations, lessor reserves the right to deny approval of such operations.

Sec. 8. Extraction of helium—Lessor reserves the option of extracting or having extracted helium from gas production in a manner specified and by means provided by lessor at no expense or loss to lessee or owner of the gas. Lessee shall include in any contract of sale of gas the provisions of this section.

Sec. 9. Damages to property—Lessee shall pay lessor for damage to lessor's improvements, and shall save and hold lessor harmless from all claims for damage or harm to persons or property as a result of lease operations.

Sec. 10. Protection of diverse interests and equal opportunity—Lessee shall: pay when due all taxes legally assessed and levied under laws of the State or the United States; accord all employees complete freedom of purchase; pay all wages at least twice each month in lawful money of the United States; maintain a safe working environment in accordance with standard industry practices; and take measures necessary to protect the health and safety of the public.

Lessor reserves the right to ensure that production is sold at reasonable prices and to prevent monopoly. If lessee operates a pipeline, or owns controlling interest in a pipeline or a company operating a pipeline, which may be operated accessible to or derived from these leased lands, lessee shall comply with section 28 of the Mineral Leasing Act of 1920.

Lessee shall comply with Executive Order No. 11246 of September 24, 1965, as amended, and regulations and relevant orders of the Secretary of Labor issued pursuant thereto. Neither lessee nor lessee's subcontractors shall maintain segregated facilities.

Sec. 11. Transfer of lease interests and relinquishment of lease—As required by regulations, lessee shall file with lessor any assignment or other transfer of an interest in this lease. Lessee may relinquish this lease or any legal subdivision by filing in the proper office a written relinquishment, which shall be effective as of the date of filing, subject to the continued obligation of the lessee and survivor to pay all accrued rentals and royalties.

Sec. 12. Delivery of premises—At such time as all or portions of this lease are returned to lessor, lessee shall place affected wells in condition for suspension or abandonment, reclaim the land as specified by lessor and, within a reasonable period of time, remove equipment and improvements not deemed necessary by lessor for preservation of producible wells.

Sec. 13. Proceedings in case of default—If lessee fails to comply with any provisions of this lease, and the noncompliance continues for 30 days after written notice thereof, this lease shall be subject to cancellation unless or until the leasehold contains a well capable of production of oil or gas in paying quantities, or the lease is committed to an approved cooperative or unit plan or communitization agreement which contains a well capable of production of unitized substances in paying quantities. This provision shall not be construed to prevent the exercise by lessor of any other legal and equitable remedy, including waiver of the default. Any such remedy or waiver shall not prevent later cancellation for the same default occurring at any other time. Lessee shall be subject to applicable provisions and penalties of FOGRMA (30 U.S.C. 1701).

Sec. 14. Heirs and successors-in-interest—Each obligation of this lease shall extend to and be binding upon, and every benefit hereof shall inure to the heirs, executors, administrators, successors, beneficiaries, or assignees of the respective parties hereto.

**FORM 3200-24**  
**OFFER TO LEASE AND LEASE FOR GEOTHERMAL RESOURCES**

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OBM NO. 1004-0038  
Expires January 31, 1986

OFFER TO LEASE AND LEASE FOR GEOTHERMAL RESOURCES

Serial No. \_\_\_\_\_

undersigned (see reverse) offers to lease all or any of the lands in item 2 that are available for lease pursuant to the Geothermal Steam Act of 1970 (30 U.S.C. 1001-1025)

Read Instructions Before Completing

1. Name \_\_\_\_\_

Street \_\_\_\_\_

City, State, Zip Code \_\_\_\_\_

2. Surface managing agency if other than BLM: \_\_\_\_\_ Unit/Project \_\_\_\_\_

Legal description of land requested (segregate by public domain and acquired lands):

T \_\_\_\_\_ R \_\_\_\_\_ Meridian \_\_\_\_\_ State \_\_\_\_\_ County \_\_\_\_\_

Total acres applied for \_\_\_\_\_

Percent U.S. interest \_\_\_\_\_

Amount remitted: Filing fee \$ \_\_\_\_\_

Rental fee \$ \_\_\_\_\_

Total \$ \_\_\_\_\_

DO NOT WRITE BELOW THIS LINE

3. Land included in lease:

T \_\_\_\_\_ R \_\_\_\_\_ Meridian \_\_\_\_\_ State \_\_\_\_\_ County \_\_\_\_\_

Total acres in lease \_\_\_\_\_

Rental retained \$ \_\_\_\_\_

In accordance with the above offer, or the previously submitted competitive bid, this lease is issued granting the exclusive right to drill for, extract, produce, remove, utilize, sell, and dispose of all the geothermal resources in the lands described in item 3 together with the right to build and maintain necessary improvements thereupon, for a primary term of 10 years. Rights granted are subject to applicable laws, the terms, conditions, and attached stipulations of this lease, the Secretary of the Interior's regulations and formal orders in effect as of lease issuance and, when not inconsistent with lease rights granted or specific provisions of this lease, regulations and formal orders hereafter promulgated.

THE UNITED STATES OF AMERICA

Type of lease:

☐ Noncompetitive

☐ Competitive

☐ Other \_\_\_\_\_

by \_\_\_\_\_ (Signing Officer)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Date)

EFFECTIVE DATE OF LEASE \_\_\_\_\_

4. (a) Undersigned certifies that:

(1) Offeror is a citizen of the United States; an association of such citizens; a municipality; or a corporation organized under the laws of the United States, any State or the District of Columbia; (2) All parties holding an interest in the offer are in compliance with 43 CFR 3200 and the authorizing Act; (3) Offeror's chargeable interests, direct and indirect, do not exceed that allowed under the Act; and (4) Offeror is not considered a minor under the laws of the State in which the lands covered by this offer are located.

(b) Undersigned agrees that signature to this offer constitutes acceptance of this lease, including all terms, conditions and stipulations of which offeror has been given notice, and any amendment or separate lease that may cover any land described in this offer open to lease application at the time this offer was filed but omitted for any reason from this lease. The offeror further agrees that this offer cannot be withdrawn, either in whole or part, unless the withdrawal is received by the BLM State Office before this lease, an amendment to this lease, or a separate lease, whichever covers the land described in the withdrawal, has been signed on behalf of the United States.

This offer will be rejected and will afford the offeror no priority if it is not properly completed and executed in accordance with the regulations, or if it is not accompanied by the required payments. Title 18 U.S.C. Sec. 1001 makes it a crime for any person knowingly and willfully to make to any Department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Duly executed this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_

(Signature of Lessee or Attorney-in-fact)

## LEASE TERMS

Sec. 1. Rentals—Rentals shall be paid to proper office of lessor in advance of each lease year until there is production in commercial quantities from the leased lands. Annual rental rates per acre or fraction thereof are: \$1 for noncompetitive leases and \$2 for competitive leases.

If this lease or a portion thereof is committed to an approved cooperative or unit plan which includes a well capable of producing leased resources, and the plan contains a provision for allocation of production, royalties shall be paid on the production allocated to this lease. However, annual rentals shall continue to be due for those lands not within a participating area.

Failure to pay annual rental, if due, on or before the anniversary date of this lease (or next official working day if office is closed) shall automatically terminate this lease by operation of law. Rentals may be suspended by the Secretary upon a sufficient showing by lessee.

Sec. 2. Royalties—Royalties shall be paid to proper office of lessor. Royalties shall be computed in accordance with regulations and orders. Royalty rates on production are: 10 percent for steam, heat, or energy; 5 percent for byproducts; and 5 percent for demineralized water.

Lessee reserves the right to establish reasonable minimum values on production after giving lessee notice and an opportunity to be heard. Royalties shall be due and payable on the last day of the month following the month in which production occurred.

A minimum royalty shall be due for any lease year beginning on or after the commencement of production in commercial quantities in which royalty payments aggregate less than \$2 per acre. Lessee shall pay such difference at the end of lease year. This minimum royalty may be waived, suspended, or reduced, and the above royalty rates may be reduced for all or portions of this lease if the Secretary determines that such action is necessary to encourage the greatest ultimate recovery of the leased resources, or is otherwise justified.

Sec. 3. Bonds—Lessee shall file and maintain any bond required under regulations.

Sec. 4. Diligence, rate of development, unitization, and drainage—Lessee shall perform diligent exploration as required by regulations and shall prevent unnecessary damage to, loss of, or waste of leased resources. Lessor reserves right to specify rates of development and production in the public interest and to require lessee to subscribe to a cooperative or unit plan, within 30 days of notice, if deemed necessary for proper development and operation of the area, field, or pool embracing these leased lands. Lessee shall drill and produce wells necessary to protect leased lands from drainage or pay compensatory royalty for drainage in amount determined by lessor.

Sec. 5. Documents, evidence, and inspection—Lessee shall file with proper office of lessor, not later than (30) days, after effective date thereof, any contract or evidence of other arrangement for the sale or disposal of production. At such times and in such form as lessor may prescribe, lessee shall furnish detailed statements showing amounts and quality of all products removed and sold, proceeds therefrom, and amount used for production purposes or unavoidably lost. Lessee may be required to provide plats and schematic diagrams showing development work and improvements, and reports with respect to parties in interest, expenditures, and depreciation costs.

In the form prescribed by lessor, lessee shall keep a daily drilling record, a log, and complete information on well surveys and tests and keep a record of subsurface investigations and furnish copies to lessor when required. Lessee shall keep open at all reasonable times for inspection by any authorized officer of lessor, the leased premises and all wells, improvements, machinery, and fixtures thereon, and all books, accounts, maps, and records relative to operations, surveys, or investigations on or in the leased lands. Lessee shall maintain copies of all contracts, sales agreements, accounting records, and documentation such as billings, invoices, or similar documentation that support costs claimed as manufacturing, preparation, and/or transportation costs. All such records shall be maintained in lessee's accounting offices for future audit by lessor. Lessee shall maintain required records for 6 years after they are generated or, if an audit or investigation is underway, until released of the obligation to maintain such records by lessor.

During existence of this lease, information obtained under this section shall be closed to inspection by the public in accordance with the Freedom of Information Act (5 U.S.C. 552).

Sec. 6. Conduct of operations—Lessee shall conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual, and other resources, and to other land uses or users. Lessee shall take reasonable measures deemed necessary by

lessor to accomplish the intent of this section. To the extent consistent with leased rights granted, such measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorize future uses upon or in the leased lands, including the approval of easements or rights-of-ways. Such uses shall be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessees.

Prior to disturbing the surface of the leased lands, lessee shall contact lessor to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary. Areas to be disturbed may require inventories or special studies to determine the extent of impacts to other resources. Lessee may be required to complete minor inventories or short term special studies under guidelines provided by lessor. If in the conduct of operations, threatened or endangered species, objects of historic or scientific interest, or substantial unanticipated environmental effects are observed, lessee shall immediately contact lessor. Lessee shall cease any operations that would result in the destruction of such species or objects.

Sec. 7. Production of byproducts—If the production, use, or conversion of geothermal resources from these leased lands is susceptible of producing a valuable byproduct or byproducts, including commercially demineralized water for beneficial uses in accordance with applicable State water laws, lessor may require substantial beneficial production or use thereof by lessee.

Sec. 8. Damages to property—Lessee shall pay lessor for damage to lessor's improvements, and shall save and hold lessor harmless from all claims for damage or harm to persons or property as a result of lease operations.

Sec. 9. Protection of diverse interests and equal opportunity—Lessee shall maintain a safe working environment in accordance with standard industry practices and take measures necessary to protect the health and safety of the public. Lessor reserves the right to ensure that production is sold at reasonable prices and to prevent monopoly.

Lessee shall comply with Executive Order No. 11246 of September 24, 1965, as amended, and regulations and relevant orders of the Secretary of Labor issued pursuant thereto. Neither lessee nor lessee's subcontractor shall maintain segregated facilities.

Sec. 10. Transfer of lease interests and relinquishment of lease—As required by regulations, lessee shall file with lessor, any assignment or other transfer of an interest in this lease. Lessee may relinquish this lease or any legal subdivision by filing in the proper office a written relinquishment, which shall be effective as of the date of filing, subject to the continued obligation of the lessee and surety to pay all accrued rentals and royalties.

Sec. 11. Delivery of premises—At such time as all or portions of this lease are returned to lessor, lessee shall place all wells in condition for suspension or abandonment, reclaim the land as specified by lessor, and within a reasonable period of time, remove equipment and improvements not deemed necessary by lessor for preservation of producible wells or continued protection of the environment.

Sec. 12. Proceedings in case of default—If lessee fails to comply with any provisions of this lease, and the noncompliance continues for 30 days after written notice thereof, this lease shall be subject to cancellation in accordance with the Act. However, if this lease includes land known to contain a well capable of production in commercial quantities, it may be cancelled only by judicial proceedings. This provision shall not be construed to prevent the exercise by lessor or any other legal and equitable remedy, including waiver of the default. Any such remedy or waiver shall not prevent later cancellation for the same default occurring at any other time.

Whenever the lessee fails to comply in a timely manner with any of the provisions of the Act, this lease, the regulations, or formal orders, and immediate action is required, the Lessor may enter on the leased lands and take measures deemed necessary to correct the failure at the expense of the Lessee.

Sec. 13. Heirs and successors-in-interest—Each obligation of this lease shall extend to and be binding upon, and every benefit hereof shall inure to, the heirs, executors, administrators, successors, or assigns of the respective parties hereto.

## **APPENDIX A-III**

### **SURFACE USE AND BEST MANAGEMENT PRACTICES**

---

#### **INTRODUCTION**

The locations of well sites are dictated by the geologic target to be drilled. Therefore, environmentally “ideal” locations for construction activities are not always coincident with the geologic target and avoidance of damage to surface resources is not always possible. It is neither possible nor practical to avoid all harm, and special practices or construction techniques may need to be employed to minimize impacts.

This appendix describes various types of practices that are designed to minimize surface disturbance and effects on other resources and retain the reclamation potential of the disturbed area. These practices may be general and apply nationwide, agency-wide, or regionally, or may be more specific and apply to a particular area or site. The practices represent effective and practical means of accomplishing the management goals and objectives of Bureau of Land Management (BLM) and should be used as a guide when preparing plans and details that are specific to individual projects.

Generally, the practices described in this appendix have been accepted and employed by industry for similar projects and/or have been derived from this Resource Management Plan Amendment (RMPA) analysis in response to issues identified during scoping and to address impacts identified during analysis. The standard practices are common to all alternatives described in Chapter 2 of this RMPA/Environmental Impact Statement (EIS).

The standard practices in this appendix should not be construed as rigid requirements that will be applicable to every situation. Rather, the ideas presented in this appendix communicate philosophy, approach, and examples that have been successful from which site-specific applications can be developed. The operator and surface-management agency working together can develop the best approach to achieve the management objectives in each situation.

While operations of Federal fluid minerals leases are managed by the BLM, the operations are managed in cooperation with the surface-management agency or surface owner, if it is other than the BLM, in order to guide surface use and management. Where the surface is privately owned, the operator is responsible for reaching an agreement with the private surface owner (refer to Chapter 2, Section 2-2).

The requirements and guidelines relevant to Federal fluid minerals are described briefly below.



## **SURFACE USE GUIDANCE**

### **Onshore Oil and Gas Orders**

Every oil and gas operation authorized under a Federal fluid minerals lease must comply with Federally mandated regulations and orders. Procedures are established for exploration of Federal oil and gas reserves in a series of Onshore Oil and Gas Orders, which are authorized by 43 CFR Part 3160 and 3180. These orders detail uniform national standards for minimum levels of performance expected from lessees and operators when conducting oil and gas activities on Federal and American Indian lands. Two orders are particularly relevant to determining the potential for environmental impacts associated with a proposed project. These are Onshore Oil and Gas Order Nos. 1 and 2.

Onshore Order No. 1 requires lessees and operators to conduct their exploration, development, production, and abandonment operations in a manner as follows:

- # conform with applicable Federal laws and regulations and with State and local laws and regulation to the extent that such State and local laws are applicable to operations on Federal or Indian leases
- # conform with the lease terms, lease stipulations, and conditions of approval
- # ensure diligent development and efficient resource recovery
- # protect the lease from drainage
- # afford adequate safeguards for the environment
- # ensure proper reclamation of disturbed lands
- # conform with currently available technology and practice
- # ensure that underground sources of fresh water will not be endangered by any fluid injection operation
- # otherwise ensure the protection of public health and safety

The order holds the lessee “fully accountable for their contractors’ and subcontractors’ compliance with the requirements of the approved permit and/or plan.”

Onshore Order No. 1 specifically requires survey work and a related report if the surface-management agency has reason to believe that properties listed, or eligible for listing, on the National Register of Historic Places are present in the area of potential effect. The order also requires the surface-

management agency to identify any threatened and endangered species and/or critical habitat problems and other environmental concerns (e.g., wilderness and wilderness study areas, known or potential surface geological hazards, etc.).

BLM Manual 3160 provides guidelines and procedures for processing Applications for Permits to Drill (APDs) and subsequent operations. BLM Manual Handbook 3160-1 provides guidelines for review of technical and environmental considerations for APDs and subsequent activities.

Onshore Order No. 2 established specific and detailed requirements along with minimum standards for the following:

- # well control during drilling
- # casing and cementing
- # drilling mud and circulating system
- # drill-stem testing
- # special drilling operations
- # blowout preventer equipment to prevent the uncontrolled release of formation fluids to the surface
- # related surface use
- # abandonment of drilling operations

In some instances, Onshore Order No. 2 relies on existing standards prepared by the American Petroleum Institute, Occupational Safety and Health Administration, and other organizations or agencies.

Onshore Order No. 6 addresses operations with hydrogen sulfide associated and Onshore Order No. 7 addresses disposal of produced water in pits and wells.

### **Geothermal Resources Operations**

The Geothermal Resources Leasing and Operations Rule (43 CFR Part 3200, et al) described in Appendix A-1 provides direction for conducting exploration operations (Subpart 3252), drilling operations (Subpart 3262), and abandonment (Subpart 3263).

## **Standard Lease Terms**

Standard lease terms, which are disclosed on the standard lease forms, indicate that the operator is responsible for diligent development and to conduct operation in a manner that minimizes adverse impacts on resources anywhere within the leasehold. Copies of standard Form 3100-11, Offer to Lease and Lease for Oil and Gas, and Form 3200-24, Offer to Lease and Lease for Geothermal Resources are provided at the end of Appendix A-II.

In addition to the standard lease terms and conditions, the BLM authorized officer may require site-specific mitigation at the time of an APD at a specific site. These mitigation measures would be attached to the APD as conditions of approval (described below).

## **Lease Stipulations**

Constraints in the form of stipulations are conditions included in a lease when environmental and planning analyses have demonstrated that additional and more stringent environmental protection is needed. Stipulations are provisions that modify the standards lease rights and are attached and made part of the lease. The operator would be expected to comply with the stipulations specific to resource concerns that are attached to a lease (as described in Chapter 2 and Appendix A-V).

## **Surface Operating Standards**

Minimum standards for design, construction, and operations, primarily in the Rocky Mountain States, are set forth in the Surface Operating Standards for Oil and Gas Exploration and Development “Gold Book” prepared by the BLM and Forest Service Rocky Mountain Regional Coordinating Committee (January 1989). The Gold Book was developed to aid the operator in permit approval and the conduct of oil and gas operations on Federal lands during exploration, development, production, and abandonment. It is intended to give the operator general informational guidance on compliance with the operating requirements given in 43 CFR 3000, 36 CFR 228E, and Notice to Lessees that have, or will be, promulgated or issued. Information is provided for the preparation of surface use and drilling programs and includes the following information and guidelines:

- # responsibilities for geophysical operations on Federal lands
- # procedures for oil and gas operations
- # siting and construction procedures for well sites
- # planning, location, design, construction, maintenance, and operations of roads and access ways

- # design and construction of drainage structures
- # drilling operations and related surface-disturbing activities
- # production operations standards and objectives, approvals, reporting, notification, disposal of produced water, pollution control, hazardous waste management, inspections and enforcement
- # reclamation of pits, well pads, flowlines and pipelines, and roads
- # abandonment inspection, approval, release of bonds

Copies of the Gold Book are available in limited quantities from the New Mexico State Office of the BLM.

### **Conditions of Approval**

Additional constraints may be necessary if the authority to manage the activity on the lease does not already exist under laws, regulations, or orders.

Constraints in the form of conditions of approval of an APD are site-specific requirements or measures imposed to protect resources or resource values. Conditions of approval must be reasonable and consistent with lease rights. The authorized officer has the authority to relocate facilities (up to 656 feet [200 meters]), control timing (delay for 60 days), and impose other mitigation under Sections 2 and 6 of the standards lease terms (BLM Forms 3100-11 and 3200-24 are provided at the end of Appendix A-II). Potential mitigation measures that could be conditions of approval are addressed in Chapter 4 of this RMPA/EIS.

### **Best Management Practices**

More specific to a region or area, a surface-management agency may have standards, or best management practices, to which an operation should conform. While the goals and philosophies regarding surface management are similar in intent, the operator must be responsible for understanding the requirements of the pertinent surface-management agency. Knowledge of the management plans of the surface-management agency, as well as agency operational standards, procedures, and environmental protection requirements, will help an operator meet these standards. The best management practices described below were developed by the Las Cruces Field Office of BLM for this RMPA/EIS.

## **BLM BEST MANAGEMENT PRACTICES**

The best management practices described below apply to any fluid minerals project on public land within the Planning Area, and supplement the standards and guidelines from sources described above.

### **Preliminary Investigations**

Activities occurring during preliminary investigations may include remote sensing; mapping of rock outcrops and seeps (either of which result in little or no surface disturbance); and seismic, gravity, and magnetic surveys (refer to Appendix B for more information).

A lease is not required to conduct such preliminary investigations. However, the geophysical operator is required to file a completed Form 3150-4, "Notice of Intent to Conduct Oil and Gas Exploration Operations" for all operations on public lands.

In general, BLM requires an examination of resource values and development of appropriate surface protection and reclamation measures prior to beginning surface disturbing activities associated with preliminary investigations. A copy of Form 3150-4a, Terms and Conditions for Notice of Intent to Conduct Geophysical Exploration is provided at the end of this appendix. Compliance monitoring should occur during and after seismic exploration activities when or if necessary. Compliance inspections during the operation ensure that requirements and guidelines are being followed. Compliance inspections upon completion of work ensure that the lines are clean and drill holes are plugged properly.

The frequency of authorized seismic exploration will be dependent upon resource conditions and seasonal restrictions (timing limitations) that may be imposed to reduce conflicts with watershed conditions, wildlife, and hunting. Management practices specific to wildlife and vegetation resources include the following:

- # Prior to surveying/flagging routes for geophysical surveys or other preliminary activities during the raptor breeding season, the project area shall be surveyed for raptor nests. Surveys shall be conducted by professional biologists approved by the Authorized Officer. The Universal Transmercator grid (UTM) locations of all raptor nests shall be reported to the Authorized Officer. All active raptor nests should be avoided by the required distances per the stipulation of controlled surface use. An "active raptor nest" is defined as any raptor or corvid nest being during the current nesting season.
- # In areas that constitute occupied or potential aplomado falcon habitat, a protocol survey for this species shall be conducted along with the general raptor nest survey described above, prior to surveying/flagging lines during the breeding season.

- # During operations at any time, large (greater than 6 feet [1.8 meters] in height) trees or shrubs containing or capable of containing a raptor nest shall be avoided by vehicular traffic or other activities likely to destroy them.
- # Throughout preliminary investigations and subsequent activities, operators (not BLM) are responsible for compliance with the Migratory Bird Treaty Act. Operators should coordinate with the U.S. Fish and Wildlife Service on actions likely to “take” migratory birds.
- # Time activities to avoid wet periods.
- # Minimize the off-road impact of large vehicles. Use wide, flat-tread, balloon tires (especially on seismic “thumper” trucks) where possible. Use all-terrain vehicles rather than large vehicles where possible.
- # Avoid vehicle use on slopes greater than 4 percent.

### **Administrative Requirements**

The operator and its contractors and subcontractors will conduct all operations in full compliance with all applicable Federal, State, and local laws and regulations; applicable lease stipulations; and guidelines specified in the APD unless a written modification, waiver, or exception from the Authorized Officer has been granted (if action is acceptable with proper mitigation).

Prior to commencing construction activities, the operator and its contractors and subcontractors may conduct a preconstruction conference with the BLM Authorized Officer. Environmental and safety training will be part of the operator, contractor, and subcontractor training prior to construction. All employees will be familiarized with the resource protection policies of the BLM, requirements, and mitigating measures incorporated into each project.

The Authorized Officer will guide the project during all stages of the project including construction of roads and well pad, drilling and completion of the well, reclamation, preparation for production, and abandonment.

### **Surface Use**

#### **Roads**

BLM encourages the use of existing roads to the maximum extent practical and minimizing new roads in unroaded areas. Where new roads are needed, construction, maintenance, rehabilitation, abandonment, and closure of the roads on public land will be in accordance with the BLM New

## Well Sites

In siting facilities at the well site, the following measures must be followed:

- # Minimize disturbance to existing fences and other improvements on public land.
- # Avoid livestock and wildlife water supplies by 0.25 mile (400 meters).
- # Surface disturbance is not permitted within 656 feet (200 meters) of existing wildlife improvements.
- # Prior to surveying/flagging locations for pads, routes for roads, and other preliminary activities, during the raptor breeding season, the project area shall be surveyed for raptor nests. Surveys shall be conducted by professional biologists approved by the Authorized Officer. All active raptor nests shall be avoided during the dates and by the distances listed below. An “active raptor nest” is defined as any raptor or corvid nest being used during the current nesting season.

### Distance:

- Eagle - 0.5 mile (800 meters)
- Peregrine falcon - 900 to 3,400 meters (consistent with the management zones in Johnson 1994)
- All other raptor species - 0.25 mile (400 meters)

### Timing:

- Peregrine falcon - variable March 1 through October 16
- Aplomado falcon - January 1 through July 31
- All raptor species during observed nest establishment through fledgling

Other conditions of approval may be applicable resulting from BLM and U.S. Fish and Wildlife Service consultation, when applicable.

- # In areas that constitute occupied or potential aplomado facon habitat, a protocol survey for this species shall be conducted along with the above general raptor nest survey prior to surveying/flagging lines during the breeding season (January 1 through July 31).
- # During operations at any time, large (greater than 6 feet (1.8 meters) in height) trees or shrubs containing or capable of containing a raptor nest shall be avoided by vehicular traffic or other activities likely to destroy them.

- # Encourage protection of the Rio Grande – avoid surface disturbance where possible within 656 feet (200 meters) of the outer edge of the 100-year floodplain to protect riparian/aquatic systems and the integrity of the floodplain.
- # Site facilities to minimize in-channel excavation.
- # Avoid visual intrusions by locating facilities below hilltops (on slope or brow of hill) to minimize silhouetting against the skyline while avoiding hillside “cut and fill” as much as possible.
- # Select site that provides topographic and vegetative screening when feasible.
- # Avoid populated areas, parks, scenic areas, hilltops, and natural or man-made structures.
- # Pits containing oil, tank bottoms, other hydrocarbons, salt water, or any toxic substances will not be allowed in a floodplain.
- # Locate fluid containers on the upslope side of drilling pads whenever possible to facilitate early detection of leaks and spills – produced or drilling fluids could cause long-term damage to soils, ground water, and vegetation.
- # On slopes between 5 and 20 percent, surface disturbing activities will be scrutinized and conditions of approval may be applied to manage soils to maintain productivity, minimize erosion, and stabilize resources.
- # Occupancy or use of fragile or highly erosive soils will be considered on a case-by-case basis. On those soils that are on a slope greater than 5 percent, mitigation measures may be required (e.g., water bars, reseeding, pad design changes, etc.).

In constructing the site:

- # Construction must conform to the approved well site and layout plan in the Surface Use Plan of Operations (SUPO).
- # Limit tree and vegetation clearing to the minimum area required.
- # In areas of crucial habitat (grasslands, montane scrub, woodland/forest, and riparian/other wetlands/playas), new disturbance will be minimized to reduce loss or fragmentation of, and edge effect in the habitat (e.g., use of existing roads and utility corridors, minimization of cross-country placement of roads and utility corridors, pipelines, and other rights-of-way). Projects in areas of crucial habitat will be reviewed on a case-by-case basis for potential effects on crucial habitat. There will be the potential for other conditions of approval resulting from BLM review.



- # Feather and thin edges to reduce visual contrast in areas of visual sensitivity.
- # Time construction activities to avoid wet periods.
- # Regulate stream-side gravel borrow areas (refer to gravel source section below).
- # Surround reserve pits by BLM-standard four-strand barbed-wire fence.
- # An enclosed pit system or steel tanks may be required in some environmentally sensitive areas, flood areas, areas of shallow groundwater, and areas within 656 feet (200 meters) of a drainage. The drilling fluids, mud, and cuttings are stored in tanks and transported to approved offsite disposal areas.
- # Aboveground structures that are not subject to safety requirements should be painted to blend with the natural color of the landscape.
- # Ensure that development of the water source is consistent with water quality protection requirements.
- # More stringent noise abatement may be required in crucial wildlife habitats, in proximity to occupied locations, and developed recreation areas.
- # Powerlines shall be constructed to standards outlined in the most recent version of “Suggested Practices for Raptor Protection on Powerlines” published by the Edison Electric Institute/Raptor Research Foundation, unless otherwise agreed to by the Authorized Officer. The holder is responsible for demonstrating that power pole designs not meeting these standards are “raptor safe”. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modifications or additions to power line structures constructed under this authorization, should they be necessary to ensure the safety of large perching birds. The modifications and/or additions shall be made by the holder without liability or expense to the United States.
- # Operators are responsible for taking precautions to avoid igniting wildland fires and blowouts.

## **Pipeline Siting**

- # Avoid locating pipeline routes adjacent to live watercourses or in proximity to steep hillsides to the extent practical to minimize the risk of petroleum spills and silt from construction entering streams.

- # Locate pipelines along existing linear facilities (other pipelines and roads) to the maximum extent practical. Minimize pipeline crossing of undisturbed areas.
- # Blading or clearing of the pipeline route may be authorized under the following definitions. Blading is the complete removal of brush and ground vegetation. Clearing is the removal of brush while leaving ground vegetation (grasses, forbs, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface. In areas where blading or clearing is allowed, the maximum width will not exceed that which is necessary for construction and maintenance of the line.
- # Vegetation, soil, and rocks left as a result of construction or maintenance activity shall be randomly scattered over the project area and shall not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer, except that an earthen berm shall be left over the ditch line to allow for settling back to grade.

### **Gravel Source**

The temporary gravel source pit will be constructed so that runoff and sediment does not drain into streams. Depending on the local precipitation and other conditions, it may be advisable to install sediment traps or barriers (slash or straw bales) to ensure that runoff is adequately filtered. If needed, the location of the barriers would be determined by BLM. During reclamation, the gravel source pit will be regraded to meet preconstruction conditions and revegetated.

### **Noxious Weed Control**

BLM will determine the size and density of the noxious weed infestations requiring implementation of a control program. Mechanical, chemical, biological, or other methods approved by BLM will be used to control infestations of noxious weed in disturbed areas. The operator must include provisions for noxious weed prevention and treatment in the SUPO. These may include removal of weed sources that could be picked up and transported by passing vehicles, limit seed transport into relatively weed-free areas, and/or retain shade to suppress weeds. Controls will be applied in the season or growth stage when most effective.

### **Pollution Control and Hazardous Substances Management**

- # Ensure proper servicing and refueling of equipment to prevent surface and groundwater pollution.

- # Leaking equipment will be promptly repaired or removed from the site to prevent contamination from spills – any soil or water that has been contaminated will be placed in appropriate containers and removed from the site.
- # Spill prevention, control, and countermeasure plans are required.
- # Use of pesticides and herbicides shall comply with applicable Federal and State laws. Prior to use of pesticides, the BLM authorized officer will approve a plan for its use.
- # Storage tanks will have a berm constructed around them 24 inches high and of sufficient dimensions to contain the contents of the largest tank to serve as secondary containment should a spill occur.
- # The concentration of hazardous substances in the reserve pit at the time of pit backfilling must not exceed the standards set forth in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).
- # All drilling-related CERCLA hazardous substances removed from the location and not reused at another drilling location must be disposed of in accordance with applicable Federal and State regulations.
- # All pits and tanks containing liquids or semi-liquids will be covered to prevent the entrapment or contamination of wildlife.

### **Drilling Operations**

All proposed drilling operations and related surface-disturbing activities, as well as any change from an approved APD, must be approved before such activities are conducted. Approval occurs in accordance with (1) appropriate Onshore Oil and Gas Orders or Geothermal Resources Rule, (2) 43 CFR 3160, (3) Notices to Lessees, and (4) lease terms and conditions of approval.

### **Producing Operations**

Portable and temporary facilities located on the drill pad are used to initiate the production from the reservoir. As drilling proceeds and reservoir limits are established, permanent production facilities are designed and installed. The type, size, and number of the facilities are determined by the number of producing wells, expected production rates, volumes of gas and water expected to be produced with the oil, and the number of separate leases involved. Any construction of new, permanent production facilities will conform with the best management practices described above and also must comply with the regulations (CFR), onshore orders, and applicable Notices to Lessees.

Additional considerations may arise from power systems that may be required for pumping (gas or electric) and generate noise; the siting and operation of facilities to separate water from oil, treatment and storage facilities; the need to dispose of wastewater that may be saline via evaporation pits or fluid injection.

Fluid minerals operations are subject to the applicable laws, regulations, lease terms and stipulations, orders, notices, and instructions of the BLM Authorized Officer. These include, but are not limited to, conducting operations in a manner that ensures the proper handling, measurement, disposition, and site security of leasehold production; protecting other natural resources, environmental quality, life, and property.

All production equipment installed on Federal leases will be constructed to prevent birds and bats from entering them and, to the extent practical, to discourage perching and nesting.

### **Reclamation and Abandonment**

A reclamation plan will be part of the SUPO. Reclamation will be required for any surface disturbed that is not needed for continued well operations (producing and abandoned well sites). Additional reclamation measures may be required based on the conditions existing at the time of abandonment, and included as part of the conditions of approval of the Notice of Intent to Abandon.

- # Include provisions for noxious weed prevention and treatment.
- # Ensure proper disposal of debris.
- # Ensure reclamation is per surface owner's specifications/recommendations if applicable.

### **Well Site**

- # All disturbed areas no longer needed for operations will be recontoured and revegetated.
- # Re-establish vegetation quickly on bare ground to minimize the potential for erosion and spread of noxious weeds.
- # A restoration plan for habitat of special status species will be developed in coordination with and approved by BLM.
- # All fill material sources will be relatively free of noxious weeds.
- # Restore habitat areas of special status species to pre-project conditions in accordance with the BLM-approved restoration plan. Timing for the completion of restoration work will be determined by the type of activities required and weather/climatic conditions.

- # Plug wells in a manner to prevent fluid migration and per State requirements.
- # Borrow pits and quarries will be restored.
- # Upon closure of the mud pits, bury all drilling products with at least 24 inches of cover, if material is available to ensure successful revegetation.
- # After abandonment and reclamation of a wellpad, a BLM-standard four-strand wire fence will be erected to exclude cattle for a minimum of two growing seasons.

### **Access Roads**

- # When roads are abandoned, they will be ripped at least 16 inches deep, including turnouts; fill materials will be placed in cuts, and the abandoned road should be returned to its natural contour to the extent practical; then areas will be reseeded with a seed mix authorized by BLM.

## **APPENDIX A-IV**

### **REASONABLE FORESEEABLE DEVELOPMENT**

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#### **INTRODUCTION**

This appendix provides a summary of the exploration history, current lease status, and the 20-year projections for reasonable foreseeable development (RFD) in the Planning Area (Sierra and Otero Counties).

The Bureau of Land Management (BLM) Supplemental Program Guidance for planning for fluid mineral resources (BLM Manual Section [MS] 1624.2) identifies three factors of analysis that should be considered in making fluid minerals determinations in resource management plans or plan amendments. These are (1) the potential for fluid mineral occurrence and development, (2) impacts (including cumulative) of reasonably foreseeable development, and (3) the need for applying constraints or restrictions (stipulations) (BLM MS 1624.22).

The first factor, determining the potential for fluid minerals occurrence and development, is accomplished generally by identifying the major geologic trends, researching historical fluid minerals records (to the extent they are available), and predicting the resource capability and potential.

The next factor, RFD, is a projection of the fluid minerals actions and activities, including development, that are likely to occur in the Planning Area (Sierra and Otero Counties) over the life of Resource Management Plan Amendment (RMPA) (in this case, 20 years). The fluid minerals specialist focuses attention on projecting fluid minerals leasing, exploration, development, production, and abandonment activities likely to occur on land managed by the BLM and other Federal surface management agencies. This projection includes the number, density, type of wells likely to be drilled, and the surface use requirements (to project the amount of surface disturbance).

Once the projection of RFD is established, the interdisciplinary team is in a position to analyze the potential impacts of each alternative, the third factor. These impacts include direct, indirect, and cumulative impacts of the exploration, development, production, and abandonment activities projected to occur over the next 20 years.

#### **EXPLORATION HISTORY**

The oil and gas industry has been exploring in Sierra and Otero Counties since at least 1925 when the first well was drilled in Otero County (section 14, T. 23 S., R. 10 E., NMPM). Industry interest can be measured, in part, by evaluating the outward expression of that interest, which includes well drilling, seismic acquisition, and leasing activity.

To date, 98 wells have been drilled in Sierra and Otero Counties (35 and 63, respectively). A list of these wells is provided in Table A-2. Seventy-four of the 98 wells (76 percent) were drilled on Federal leases. Twenty-seven of all the wells drilled in the counties reported shows of oil and gas; 21 of these shows were on Federal lands. Additionally, 11 wells were reported in the Planning Area (nine of which were on Federal leases) as plugged and abandoned, typically indicating a test was run prior to abandonment but did not report shows. Four wells within the Planning Area were reported by industry scouts either to be gas wells or to have temporarily waited on production; three of the four have since been plugged. Table A-3 presents the oil and gas wildcat wells (those drilled in the area where there is no oil or gas production) by county. Table A-4 summarizes the location and potential of the four highly potential wells. It should be noted that industry indicates that, prior to 1960, any well flowing small to moderate amounts of natural gas or with good gas shows was considered insignificant because there was no market for the natural gas.

**TABLE A-2**  
**INVENTORY OF PETROLEUM WELLS DRILLED IN SIERRA**  
**AND OTERO COUNTIES, NEW MEXICO**

| Section | Township | Range | Date Drilled | Lease Name              | Total Depth | Status   |
|---------|----------|-------|--------------|-------------------------|-------------|--|
| 14      | 10 S     | 6 W   | 1956         | Allison #1              | 4,480       | Temporarily abandoned, plugged and abandoned             |
| 27      | 10 S     | 1 W   | 1952         | Victoria L&C #2         | 6,352       | No oil or gas show at total depth, plugged and abandoned |
| 25      | 10 S     | 1 W   | 1951         | Victoria L&C #1         | 6,053       | Recovered water from the perforations                    |
| 22      | 11 S     | 9 E   | 1976         | #1 Federal 'A-2'        |             | Abandoned location                                       |
| 11      | 12 S     | 5 W   | 1950         | Garner #1               | 6,524       | Plugged and abandoned                                    |
| 7       | 12 S     | 4 W   | 1982         | #1 W. Eleph. Butte Fed. | 7,230       | Dry and abandoned  |
| 3       | 12 S     | 4 W   | 1982         | #2 W. Eleph. Butte Fed. | 7,552       | Dry and abandoned  |
| 8       | 12 S     | 4 W   | 1955         | Briser #1               | 8,585       | Dry and abandoned  |
| 8       | 12 S     | 4 W   | 1951         | #1 Drew Mathews         | 7,125       | Dry and abandoned  |
| 35      | 12 S     | 1 W   | 1976         | #1K Sierra St.          | 7,860       | Dry and abandoned  |
| 10      | 12 S     | 9 E   | 1976         | #2 Lewelling            | 9,487       | Dry and abandoned  |
| 12      | 12 S     | 9 E   | 1976         | #1 Lewelling            | 9,360       | Temporarily abandoned, plugged and abandoned             |
| 12      | 12 S     | 9 E   | 1975         | 1 N.M. 'A' Federal      |             | Abandon location   |
| 25      | 12 S     | 9 E   | 1974         | #1 State Lease 2748     | 715         | Dry and abandoned  |

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| Section | Township | Range | Date Drilled | Lease Name              | Total Depth | Status                |
|---------|----------|-------|--------------|-------------------------|-------------|-----------------------|
| 5       | 12 S     | 10 E  | 1975         | #1 State L.G. '1453'    | 9,852       | Dry and abandoned     |
| 2       | 13 S     | 4 W   | 1950         | #1 Mimms                | 2,295       | Dry and abandoned     |
| 2       | 13 S     | 4 W   | 1953         | Mims #A-1               | 6,195       | Temporarily abandoned |
| 11      | 13 S     | 4 W   | 1948         | #1 Mims                 | 127         | Abandon location      |
| 3       | 13 S     | 4 W   | 1982         | #2 W. Eleph. Butte Fed. | 7,556       | Dry and abandoned     |
| 28      | 13 S     | 4 W   | 1947         | #1 J. Scott             | 525         | Plugged and abandoned |
| 28      | 13 S     | 4 W   | 1947         | Fred Bailey #1          | 625         | Plugged and abandoned |
| 28      | 13 S     | 4 W   | 1978         | Fred Bailey #1-X        |             | Abandon location      |
| 17      | 13 S     | 1 W   | 1965         | #1 Leeman Field         | 7,346       | Dry and abandoned     |
| 22      | 13 S     | 1E    | 1975         | #3 Jornada del Muerto   | 2,320       | Dry and abandoned     |
| 34      | 13 S     | 8E    | 1926         | Tularosa Basin #1       | 3,965       | Dry and abandoned     |
| 25      | 14 S     | 5 W   | 1940         | Fee #1                  | 2,100       | Dry and abandoned     |
| 2       | 14 S     | 2 W   | 1944         | Wofford #1              | 207         | Dry and abandoned     |
| 7       | 14 S     | 2 W   | 1948         | #1 Wofford              | 535         | Dry and abandoned     |
| 8       | 14 S     | 2 W   | 1940         | Graham #1               | 507         | Plugged and abandoned |
| 8       | 14 S     | 2 W   | 1949         | Wofford #2              | 502         | Dry and abandoned     |
| 18      | 14 S     | 2 W   | 1943         | Winslow #1              | 587         | Dry and abandoned     |
| 19      | 14 S     | 2 W   | 1926         | McCall #1               | 2,910       | Dry and abandoned     |
| 19      | 14 S     | 2 W   | 1947         | State #1                | 700         | Dry and abandoned     |
| 32      | 14 S     | 2 W   | no date      | #2                      | 2,900       | Dry and abandoned     |
| 17      | 14 S     | 1 W   | 1973         | #1 Jornada del Muerto   | 9,800       | Dry and abandoned     |
| 5       | 14 S     | 1 E   | 1974         | #1 Beard Fed.           | 8,850       | Dry and abandoned     |
| 13      | 14 S     | 1 E   | 1977         | #5 Jornada del Muerto   | 830         | Dry and abandoned     |
| 23      | 14 S     | 10 E  | 1970         | #1 Houston              | 3,040       | Dry and abandoned     |
| 24      | 14 S     | 10 E  | 1972         | #1 Federal 'A'          | 3,690       | Dry and abandoned     |
| 36      | 14 S     | 10 E  | 1974         | #1 State 3724           | 4,579       | Dry and abandoned     |



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**AND OTERO COUNTIES, NEW MEXICO**

| Section | Township | Range | Date Drilled | Lease Name             | Total Depth | Status  |
|---------|----------|-------|--------------|------------------------|-------------|---|
| 7       | 14 S     | 11 E  | 1990         | #1 Ysletano Canyon Fed | 5,028       | Gas well, waiting on pipe line, plugged and abandoned |
| 20      | 14 S     | 11 E  | 1992         | #1 Virden              | 4,991       | Plugged and abandoned                                 |
| 2       | 15 S     | 3 W   | 1944         | State #1               | 900         | Dry and abandoned                                     |
| 32      | 15 S     | 3 W   | 1953         | Gentry #1              | 5,418       | Dry and abandoned                                     |
| 23      | 15 S     | 2 W   | 1982         | #1 Federal '23'        | 2,630       | Dry and abandoned                                     |
| 23      | 15 S     | 2 W   | 1959         | N.M. - Fed #1          | 9,765       | Dry and abandoned                                     |
| 2       | 15 S     | 1 E   | 1976         | #4 Jornada del Meurto  | 2,105       | Dry and abandoned                                     |
| 21      | 15 S     | 11 E  | 1962         | #1 Walker              | 555         | Dry and abandoned                                     |
| 20      | 16 S     | 1 E   | 1976         | #1 Prisor Fed.         | 11,650      | Dry and abandoned                                     |
| 21      | 16 S     | 2 E   | 1952         | Guame #2               | 3,507       | Plugged and abandoned                                 |
| 21      | 16 S     | 2 E   | 1950         | Guame #1               | 2,202       | Dry and abandoned                                     |
| 5       | 17 S     | 12 E  | 1952         | Cloudcrof Unit #1      | 4,701       | Dry and abandoned                                     |
| 10      | 18 S     | 8 E   | 1969         | #1 Federal USA 'E'     | 7,785       | Dry and abandoned                                     |
| 33      | 18 S     | 8 E   | 1970         | #1 Fed G               | 7,660       | Dry and abandoned                                     |
| 30      | 18 S     | 10 E  | 1970         | #1 Fed F               | 8,288       | Plugged and abandoned                                 |
| 35      | 18 S     | 14 E  | 1981         | #1 Mesa Verde Ranch    | 7,011       | Dry and abandoned                                     |
| 15      | 18 S     | 15 E  | 1983         | #1 Dog Canyon 'YF' Fed | 8,430       | Plugged and abandoned, waiting on production test     |
| 18      | 20 S     | 9 E   | 1960         | #1 Turquoise           | 5,436       | Dry and abandoned                                     |
| 15      | 20 S     | 9 E   | 1954         | Federal #1             | 7,585       | Dry and abandoned                                     |
| 35      | 20 S     | 10 E  | 1954         | Pearson #1             | 4,468       | Dry and abandoned                                     |
| 14      | 20 S     | 14 E  | 1958         | Federal 14 #1          | 5,043       | Dry and abandoned                                     |
| 16      | 20 S     | 15 E  | 1963         | #1 State 'Av'          | 4,027       | Dry and abandoned                                     |
| 15      | 21 S     | 14 E  | 1953         | Thorn Unit #1          | 4,646       | Dry and abandoned                                     |
| 22      | 21 S     | 16 E  | 1962         | #1 Federal             | 2,253       | Dry and abandoned                                     |
| 18      | 21 S     | 18 E  | 1947         | Scap Unit #1           | 2,664       | Dry and abandoned                                     |

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**INVENTORY OF PETROLEUM WELLS DRILLED IN SIERRA**  
**AND OTERO COUNTIES, NEW MEXICO**

| Section | Township | Range | Date Drilled | Lease Name                     | Total Depth | Status   |
|---------|----------|-------|--------------|--------------------------------|-------------|--|
| 2       | 21 S     | 20 E  | 1977         | #1 Burro Canyon UT.            | 1,246       | Junked and abandoned                           |
| 2       | 21 S     | 20 E  | 1978         | #1Y Burro Canyon UT            | 5,589       | Dry and abandoned                              |
| 5       | 22 S     | 10 E  | 1939         | McGregor #1                    | 1,730       | Plugged and abandoned                          |
| 34      | 22 S     | 13 E  | 1937         | Everrett #1                    | 3945-30     | Plugged and abandoned                          |
| 30      | 22 S     | 14 E  | 1960         | #1 Hurley                      | 2,433       | Dry and abandoned                              |
| 17      | 22 S     | 16 E  | 1960         | #1 Leonard Fed                 | 65          | Plugged and abandoned                          |
| 17      | 22 S     | 16 E  | 1961         | #1 Federal                     |             | Abandon location                               |
| 6       | 22 S     | 19 E  | 1972         | #1 Little Dog-Fed              | 4,130       | Dry and abandoned                              |
| 14      | 23 S     | 10 E  | 1925         | State #1                       | 2,168       | Dry and abandoned                              |
| 7       | 23 S     | 15 E  | 1960         | #1 Liberman State              | 2,695       | Dry and abandoned                              |
| 7       | 23 S     | 16 E  | 1960         | #1 Spanel                      | 2,682       | Dry and abandoned                              |
| 19      | 23 S     | 18 E  | 1960         | #1 Warren                      | 2,353       | Dry and abandoned                              |
| 9       | 23 S     | 19 E  | 1962         | #1 Thompson                    | 3,848       | Dry and abandoned                              |
| 27      | 23 S     | 19 E  | 1961         | #1 McMillan                    | 3,189       | Dry and abandoned, shows                       |
| 21      | 24 S     | 12 E  | 1956         | Fed #1                         | 1,775       | Dry and abandoned                              |
| 21      | 24 S     | 12 E  | 1958         | Fed #1 old well drilled deeper | 1,855       | Dry and abandoned                              |
| 22      | 24 S     | 12 E  | 1931         | Evans #1                       | 3,763       | Dry and abandoned                              |
| 29      | 24 S     | 12 E  | 1984         | 1 State '29'                   |             | Abandon location                               |
| 9       | 24 S     | 14 E  | 1960         | #1 A.N. Spanel                 | 1,873       | Dry and abandoned                              |
| 28      | 24 S     | 15 E  | 1935         | Donahue #1                     | 1,692       | Dry and abandoned                              |
| 20      | 25 S     | 7 E   | 1930         | Located Land #1                | 1,328       | Plugged and abandoned                          |
| 20      | 25 S     | 7 E   | 1939         | Located Land #1                | 3,941       | Old well drilled deeper, plugged and abandoned |
| 11      | 25 S     | 8 E   | 1937         | State #1                       | 263         | Dry and abandoned                              |
| 23      | 25 S     | 8 E   | 1948         | Maris State #1                 | 986         | Plugged and abandoned                          |
| 23      | 25 S     | 8 E   | 1949         | Maris State #1                 | 731         | Dry and abandoned                              |

**TABLE A-2**  
**INVENTORY OF PETROLEUM WELLS DRILLED IN SIERRA**  
**AND OTERO COUNTIES, NEW MEXICO**

| Section | Township | Range | Date Drilled | Lease Name               | Total Depth | Status                          |
|---------|----------|-------|--------------|--------------------------|-------------|---------------------------------|
| 23      | 25 S     | 8 E   | 1978         | Marie #2                 | 970         | Plugged and abandoned           |
| 9       | 25 S     | 13 E  | 1946         | McMillan #1              | 5,215       | Plugged and abandoned           |
| 15      | 25 S     | 13 E  | 1978         | #1 G.J. Ablah            | 5,305       | Dry and abandoned               |
| 36      | 25 S     | 16 E  | 1959         | #1 State                 | 5,195       | Dry and abandoned               |
| 28      | 25 S     | 17 E  | 1980         | #1 Southland '28' State  | 2,970       | Dry and abandoned               |
| 32      | 25 S     | 18 E  | 1980         | #1 Southland St. '32'    | 3,635       | Dry and abandoned               |
| 31      | 25 S     | 19 E  | 1970         | #1 Alpha Fed             | 4,998       | Dry and abandoned               |
| 18      | 25 S     | 20 E  | 1971         | #1 W. Dog Canyon         | 4,570       | Dry and abandoned               |
| 3       | 26 S     | 8 E   | 1949         | #1 Wilmoth-Federal       | 206         | Plugged and abandoned           |
| 18      | 26 S     | 11 E  | 1954         | #1 Blanche Trigg-Federal | 5,600       | Dry and abandoned               |
| 17      | 26 S     | 11 E  | 1929         | Wingo #1                 | 450         | Dry and abandoned               |
| 14      | 26 S     | 12 E  | 1997         | #1 Bennett               | 2,643       | Junked and abandoned, lost hole |
| 14      | 26 S     | 12 E  | 1997         | #1Y Bennett Ranch        | 7,100       | Gas well                        |
| 5       | 26 S     | 16 E  | 1942         | McMillan-Turner          | 2,175       | Dry and abandoned               |
| 3       | 26 S     | 17 E  | 1980         | 1 Southland "2" State    |             | Abandon location                |
| 14      | 26 S     | 20 E  | 1959         | #1 Spiegel-Fed.          | 4,578       | Plugged and abandoned           |

SOURCE: Petroleum Information scout tickets and Dwight's scout reports

**TABLE A-3**  
**OIL AND GAS WILDCAT WELLS BY COUNTY**

| County | Number of Wells | Number of Shows | Wells on Federal Mineral Estate |
|--------|-----------------|-----------------|---------------------------------|
| Otero  | 63              | 17              | 44                              |
| Sierra | 35              | 10              | 30                              |
| Total  | 98              | 27              | 74                              |

SOURCE: Petroleum information scout tickets and Dwight's scout reports

Geophysical exploration increased significantly between 1978 and the mid 1980s due primarily to the oil embargo and resulting increase in the price of oil and gas. It should be noted that drilling of exploration wells in the Planning Area does not appear to correlate with the price of oil and/or gas.

**TABLE A-4  
SUMMARY OF HIGHLY POTENTIAL WELLS**

| <b>Well</b>  | <b>Location</b>   | <b>Date Drilled</b> | <b>Scout Report</b>  |
|--|---|---------------------|--|
| Summit<br>Mims #A-1<br>(non-Federal lease)           | T. 13S., R. 4W.,<br>Section 2, NMPM<br>Engle Basin<br>Sierra County       | 1953                | Temporarily abandoned, completed in limestone (probably Penn) gas to surface in 9 minutes, 250 thousand cubic feet per day (MCFD) on drill string test, water from perforations. |
| Houston Oil<br>#1 Lewelling<br>(Federal lease)       | T. 12 S., R. 9 E.,<br>Section 12, NMPM<br>Tularosa Basin<br>Otero County  | 1976                | Temporarily abandoned, perforated Pennsylvanian, flowed 138 MCFD. Wolfcamp formation was tested at 168 MCFD through perforations at 5,140 to 5,170 feet.                         |
| Cibola<br>#1 Ysletano<br>Canyon (Federal<br>lease)   | T. 14 S., R. 9 E.,<br>Section 12, NMPM<br>Tularosa Basin<br>Otero County  | 1990                | Gas well; perforated Atoka-Morrow, flowing 300 MCFD on 2-inch choke, no oil.   |
| Harvey Yates<br>#1Y Bennett Ranch<br>(Federal lease) | T. 26 S., R. 12 E.,<br>Section 14, NMPM<br>Tularosa Basin<br>Otero County | 1997                | Perforated Upper Mississippian/Helms<br>Calculated absolute open flow 3,615 MCFD,<br>flow 4,400 MCFD after cleanup   |

SOURCE: Petroleum information scout tickets and Dwight's scout reports.

Seismic vendors offer 2-D (two-dimensional) seismic in both Sierra and Otero Counties. These data are publicly available and were acquired in the 1970s and 1980s. The Otero Platform and Salt Graben Basin recently have seen an increase in geophysical activity, which can be correlated to the recent discovery in 1997. These data primarily are being acquired privately although a large (55 sections) 3-D (three-dimensional) survey in the Salt Basin (Crow Flats 3-D Seismic Project) is a group shoot and was completed in February 2000. The new surveys are both 2-D and 3-D. The 3-D surveys are acquired at a higher density than 2-D surveys and therefore are more expensive. 3-D surveys tend to be used to delineate prospective areas rather than as exploratory tools in frontier areas. A speculative regional survey also has been discussed as a possible survey in the Otero Platform area. The new geophysical activity as well as the increased interest in leasing indicates an active industry interest in the areas.

Existing geothermal wells in the Planning Area are located in Truth or Consequences, an area long known for its traditional hot baths and springs. Local Truth or Consequences motels use the resource for space and swimming pool heating. Additionally, a number of small businesses and public entities have used the geothermal waters for space heating, thermal baths, and swimming pools. Hatton (1978) indicated that several buildings in the city have been heated geothermally for many years. Two examples include the Truth or Consequences Senior Citizens' Center and the Carrie Tingley Hospital demonstration projects (Starkey and Icerman 1983).

Geothermal exploration in the Planning Area appears to be associated primarily with the military and New Mexico State University's (NMSU) efforts to locate geothermal resources. Exploration to date indicates that the geothermal resources are low temperature (generally less than 194° Fahrenheit (90° Celsius) and, therefore, would require a direct end use such as alternative space heating rather than electrical power generation. The price of natural gas also drives the exploration for geothermal resources; the higher the price of heating (due to the price of natural gas), the higher the incentive for alternative heat sources. Industries in southern New Mexico that have demonstrated the use of low-temperature geothermal resources include green houses and aquaculture as well as building space and pool heating.

## CURRENT LEASE STATUS

Table A-5 shows the total number of leases and lease acreage by county within Sierra and Otero Counties as of January 1, 1999.

**TABLE A-5  
EXISTING FLUID MINERAL LEASES**

| County | Oil and Gas      |                         | Geothermal       |       |
|--------|------------------|-------------------------|------------------|-------|
|        | Number of Leases | Acres                   | Number of Leases | Acres |
| Otero  | 61               | 102,939.09 <sup>a</sup> | 0                | 0     |
| Sierra | 0                | 0                       | 0                | 0     |
| Total  | 61               | 102,939.09              | 0                | 0     |

SOURCE: Bureau of Land Management 1999

NOTE: <sup>a</sup>973.42 acres questionable (one lease established in 1979 should be expired); however, BLM records indicate that those acres still are authorized and not closed.

## TWENTY-YEAR DEVELOPMENT PROJECTIONS

### Oil and Gas

Current impact analysis policy regarding RFD of fluid mineral resource requires that a minimum discovery must be assumed in “frontier” areas for the purpose of impact analysis. With the recent discovery (1997) of the gas well in Otero County, interest in the Planning Area has increased ten-fold based on lease nomination requests and new geophysical permitting activity.

BLM’s Manual 1624-1, which provides guidance on how to develop an RFD, states that

“...projections should be based on past and present leasing, exploration, and development activity as well as professional judgment on geological and technological and economic factors. Extrapolations of historical drilling and/or production activity may be used as the basis for projections.”

Using the past 72 years of drilling activity to determine the average rate of wildcat drilling, approximately 1.4 wells per year are drilled in the Planning Area with one well per year drilled on Federal leases. Given a planning period of 20 years, one might assume 28 wells drilled in the Planning Area of which 20 would be on Federal minerals. It should be noted that this Federal lease wildcat RFD is based on statistics with no regard to surface management (i.e., military, Forest Service, or Indian lands). However, only one previous well drilled on Federal lands was drilled in an area that would be open for leasing under other Federal surface management (this well was located within the boundaries of the Lincoln National Forest). Therefore, the assumption that all wells drilled on Federal lands would be under the surface jurisdiction of the BLM is appropriate.

Another possible development scenario would be to assume that the next 20 years would be similar to the most active 20-year period for each county. Again, using the past 72 years to base the statistics, the most active 20-year period for the Planning Area was from 1940 to 1960, with 38 wells drilled (27 on Federal minerals). However, the most active period for Federal minerals in the entire Planning Area was from 1960 to 1980, with 30 wells drilled on Federal minerals (37 wells total drilled). By county, the most active drilling period was 17 Federal wells out of a total of 22 wells drilled in Sierra County from 1940 to 1960, and 22 Federal wells out of a total of 29 wells drilled in Otero County from 1960 to 1980. Therefore, a potential wildcat RFD could be as little as 27 wells to 39 (17 + 22) wells drilled on Federal minerals. Due to the recent discovery on the Otero Platform, the RFD for the next 20 years assumes that the greatest number (39) of exploration wells (wildcats) will be drilled. According to the Chevron web page,

“In the petroleum industry, the average U.S. wildcat well (an exploratory well drilled a mile or more from existing production) has a one in 10 chance of striking hydrocarbons. A rank wildcat well, drilled in an unproven, frontier area, stands a one in 40 chance. Thus, although today’s prospectors have better tools than their ancient counterparts,

good luck still is a factor in the search for petroleum.”

(<http://www.chevron.com/explore/index.html>)

Using the wildcat success ratio for frontier areas of 1 in 40 wells (2.5 percent) (Chevron 1998), only one of these wells is likely to initiate a development situation of offset wells (called appraisal wells). However, with the new discovery in Otero County, BLM on the advice of industry is assuming a higher success ratio on the Otero Platform, especially given the active interest in the area, such as 3-D seismic exploration. Three wildcat wells will be assumed in the RFD to have a sufficient shows of hydrocarbons that additional wells will be drilled to “appraise” the “discovery” or successful wildcat.

Four appraisal wells have been requested for the 1997 discovery well of the Bennett Ranch Unit; therefore, four wells per appraisal program have been assumed for the RFD. This is consistent with offsetting the discovery well in four directions to delineate the potential structure that might be trapping the hydrocarbons.

In the RFD, it is assumed that three fields will be developed from the Bennett Ranch Unit and/or the three RFD appraisal scenarios. Based on the Bennett Ranch discovery, it is assumed that these fields will be gas production; however, the potential for multiple pay zones and oil production also appears to be possible. It is likely that gas production from up to approximately 12 gas wells in one field would be needed to support the cost of bringing in the infrastructure to a field located in southern Otero County (Ron Broadhead, New Mexico Bureau of Mines and Mineral Resources, personal communication, 1998). The production and potentially the resulting field size (number of wells) may need to be greater in other parts of the Planning Area due to the distance required to connect to existing gas pipelines. Therefore, additional wells will be drilled during development of the field. The RFD assumes up to 10 additional wells per field with at least 12 out of the 15 drilled wells per field producing gas (three wells are assumed to be noneconomic and will be plugged and abandoned within three years of drilling). Given the shows (refer to Table A-2) and industry’s indication for the potential for oil, each field developed in the RFD also is assumed to have an oil field developed on 40-acre spacing located within the gas field. The discovery and/or appraisal for the oil field is assumed to have been conducted by the gas wells, but none of the gas wells are assumed to produce oil. Therefore, the RFD assumes that 20 additional wells per field will be drilled to develop the oil pool and that 16 of these wells per field will produce oil (four of the wells are assumed to be noneconomic and will be plugged and abandoned). It is assumed that the oil will be trucked from the area rather than conveyed via pipeline. The oil may be stored at the wellhead or collected at a central location (bulk oil storage facility). A bulk oil storage facility will be assumed for each oil field. The oil wells may or may not produce formation water from the beginning but are assumed to produce water at some point during their production until abandonment (20 to 30 years). Gas wells also are assumed to produce formation water in their later years prior to abandonment (12 to 15 years). Therefore, one underground injection control (UIC) well is assumed to be permitted and drilled for each field. The production facilities (gas compression station

and/or gas plant, bulk oil storage and transfer station, and UIC well) could occupy the same location and the surface acreage disturbed would probably be less than 15 acres; however, for the RFD it is assumed that each facility is separate.

The RFD includes the following:

- # 5,000 miles of geophysical seismic activity (average of 250 miles per year); most of the lines would be acquired using vibrosource. Seismic surveys in areas with difficult terrain probably will be acquired using portable drilling rigs and buried dynamic charges.
- # 39 frontier wildcat wells would be drilled; three would have an appreciable show resulting in the each well being offset by four appraisal wildcats (total of 12 appraisal wells).
- # Three gas fields likely would be developed on 320-acre spacing per NMOCD Rule 104 and nearby gas fields (areal size of the field approximately 6 square miles), resulting in 12 production wells per field. Ten additional development wells per field would be drilled with the assumption that three wells of the total number of wells in a field (discovery, appraisal, and development) would be noneconomic and the impact will be short term. (Total of 30 additional wells drilled)
- # Each gas field would contain an oil field developed on 40-acre spacing per NMOCD Rule 104 (areal size approximately 1 square mile), resulting in 16 production wells per field. 20 additional wells drilled per field with the assumption that four wells of these wells would be noneconomic and the impact would be short term and the others are the producing wells.
- # Typical life of a producing well is 10 to 12 years of gas production and 30 years for oil operation; therefore, three to five gas production wells may be plugged during the planning period.
- # Approximately 100 miles of transmission pipeline would be needed to transport the gas out of the Planning Area to market (assuming three pipelines with a Planning Area average distance).
- # A compression/gas plant facility would be developed as part of each field's infrastructure (total of three).
- # Bulk oil storage facility would be developed as part of each field (total of three) .
- # Three underground injection control wells would be permitted and installed to dispose the produced water (assuming one well per field and the fields not sharing a disposal well); these



facilities are estimated based on the assumption that enough water would be produced in the field that off-site disposal would be required. This assumption may be overly conservative if the fields are gas or water production can be disposed on site via direct discharge over the next 20 years.

Table A-6 summarizes the oil and gas development over the next 20 years.

**TABLE A-6**  
**TWENTY-YEAR PROJECTION FOR OIL AND GAS DEVELOPMENT<sup>a</sup>**

| Type of Action                                 | Number of Actions on Federal Lands | Area Disturbed <sup>b</sup>   | Approximate Total Acres Disturbed |                    |
|--|------------------------------------|---|-----------------------------------|--------------------|
|  |                                    |   | Short Term                        | Long Term          |
| Geophysical (miles)                            | 5,000                              | On existing roads and trails and off-road (1 acre/mile)               | 5,000                             | Minimal            |
| Frontier Wildcat Wells                         | 39                                 | Drill pads and access road  | 351 <sup>c</sup>                  | 101.4 <sup>d</sup> |
| Appraisal gas wells (offsetting wildcat wells) | 12                                 | Drill pads, access road, pipelines, and power lines                   | 108 <sup>e</sup>                  | 60 <sup>f</sup>    |
| Gas development wells                          | 30                                 | Drill pads, access road, pipelines, and power lines                   | 228.6 <sup>e</sup>                | 126.6 <sup>f</sup> |
| Oil development wells                          | 60                                 | Drill pads, access road, and power lines                              | 484.8 <sup>g</sup>                | 268.8 <sup>h</sup> |
| Gas production facilities                      | 3                                  | 5 acres/site  | 15                                | 15                 |
| Gas transmission pipeline (miles)              | 100                                | 3.6 acres initial disturbance per mile, 2.6 acres stabilized per mile | 360 <sup>i</sup>                  | 260 <sup>i</sup>   |
| Bulk oil storage facility                      | 3                                  | 5 acres/site  | 15 <sup>j</sup>                   | 15 <sup>j</sup>    |
| UIC well                                       | 3                                  | Drill pads, access road, and power lines                              | 27 <sup>k</sup>                   | 15 <sup>k</sup>    |
| Total Acres Disturbed                          |                                    |   | 6,589.4                           | 861.8              |

NOTES:

- a Not County-specific
- b Acreage estimates for each component from observed average disturbance in the Roswell/Carlsbad area as provided in Bureau of Land Management 1994 Appendix 18 unless otherwise noted.
- c Wildcat well - assume 6 acres (400 by 600 feet [122 meters by 183 meters]) for drill pad (including worker camp) and 3 acres per access road = 9 acres. The source of this assumption is recent drill pad requests from the Bennett Ranch Operators and assumptions based on historical data made in the Roswell/Carlsbad Resource Areas of the BLM (1994).

- d 2.4 acres per well not reclaimed immediately for all but three of the rank wildcats. Three of the wildcats are assumed to develop into production wells, which result in 5 acres per well not reclaimed immediately.
- e Appraisal and development gas wells - assume 4.4 acres drill pad and access road for all wells, 4.6 acres for associated pipelines and power lines for all producing wells, which are assumed to be economic (all appraisal wells and seven development wells per field). If a worker camp is needed, it is assumed that the one set up for the wildcat well can be used.
- f Production gas wells - 5 acres per producing well will not be reclaimed immediately. For the three wells per field that are assumed to be drilled but not economic, 2.4 acres per well are assumed not be reclaimed within a three-year period after initial disturbance.
- g Development oil wells - assume 4.4 acres drill pad and access road for all wells (20 wells per field), 4.6 acres for associated pipelines and power lines for only producing wells which are assumed to be economic (16 producing wells per field). If a worker camp is needed, it is assumed that the one set up for the wildcat well can be used.
- h Production oil wells - 5 acres per well not reclaimed immediately. For the three wells per field that are assumed to be drilled but not economic, 2.4 acres per well are assumed not be reclaimed within a three year period after initial disturbance.
- i Gas transmission pipelines 3.6 acres per mile (30 feet [9 meters] wide) and reclaim to approximately 2.6 acres (8 to 9 feet [2.4 to 2.7 meters] wide).
- j This facility could occupy the same acreage as the gas production facility or the UIC facility though the acreage for those facilities would increase. Therefore, for the purpose of estimating surface disturbance, all facilities are assumed to be separate.
- k UIC wells – assume a similar amount of acreage for drilling the well and constructing the facility as a production well (9 acres per well). Assume each well is reclaimed to 5 acres per well for long-term impacts.

## **Geothermal Resources**

The production of geothermal resources for direct-use purposes could increase over the next 20 years. Space and pool heating is well known in the Truth or Consequences area, although expansion in the Truth or Consequences area would be primarily on private land. NMSU is promoting geothermal use and provides entrepreneurs with advice and facilities for potential new ventures. Greenhouses for roses and other flowers and plants as well as fish farms are potential direct uses of the resource. There are currently three commercial greenhouses in Dona Ana County south of Sierra County; two using Federal geothermal resources. Expected development within the Planning Area would be in Sierra County. Most of the identified geothermal potential in Otero County is in military withdrawn land.

Development in the next 20 years is expected to be on a small scale. Over the planning period, two temperature surveys of 30 wells each would be drilled. These drill sites would be located adjacent to existing roads and each site would disturb an area 25 feet by 25 feet (7.5 meters by 7.5 meters). Five other various kinds of geophysical exploration permits (gravity, electrical, resistivity, and radon for instance) would be approved. Most of these activities would be conducted along existing roads and trails and would involve minimal surface disturbance.

Four test wells would be drilled. Each test well would disturb an area of 1 acre and require an access road 1.5 miles long by 16 feet (4.8 meters) wide. Only one of the four test wells will be assumed to become a commercial greenhouse facility. The facility would require an area of 10 acres for development and two production wells (the original test well and another well). Wastewater either would be reinjected or pumped into evaporation pits. Table A-7 summarizes geothermal development over the next 20 years.

**TABLE A-7**  
**20-YEAR PROJECTION FOR GEOTHERMAL DEVELOPMENT**

| <b>Type of Action</b>        | <b>Number of Actions on Federal Lands</b> | <b>Area Disturbed</b>                                  | <b>Total Acres Disturbed</b> |
|------------------------------|---|--|------------------------------|
| Geophysical permit           | 5   | Primarily on existing roads and trails                 | Minimal                      |
| Temperature-gradient surveys | 2   | 30 drill pads (0.01 acres)                             | 0.6                          |
| Test wells and access roads  | 4   | Drill pads (1 acre/pad) and access road (3 acres/well) | 16                           |
| Production facilities        | 1   | 10 acres/sites (2 wells)                               | 10                           |
| Total Acres Disturbed        |   |  | 26.6                         |

## **APPENDIX A-V**

### **PLAN ALTERNATIVES CONSIDERED**

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#### **INTRODUCTION**

Prior to offering lands for lease, the New Mexico State Office Adjudication Staff reviews the records to identify what lands are available for leasing and whether stipulations need to be attached to the lease form.

Determining the availability of land and the need for either continuing existing management or imposing constraints on fluid minerals activities is accomplished through a programmatic level of resource planning and National Environmental Policy Act (NEPA) analysis; in this case, the Resource Management Plan Amendment (RMPA) and Environmental Impact Statement (EIS). The results of the analysis are used to clarify Bureau of Land Management's (BLM's) intent, in advance, of the need to protect certain resources and resource values. The primary benefit is that NEPA analysis and legal compliance are greatly streamlined for future undertakings (e.g., leasing, Application for Permit to Drill [APD], etc.).

This appendix provides the information regarding the stipulations resulting from this programmatic analysis. Once approved, this along with other management information in the RMPA/EIS will provide the guidelines on how fluid minerals activities will be managed on public land and privately owned lands overlying Federal fluid minerals in Sierra and Otero Counties.

#### **AVAILABILITY OF LANDS**

Generally, Federal lands are managed as either closed to leasing or open for leasing with or without stipulations. An explanation of these follows.

##### **Closed to Leasing**

Public land may be affected by nondiscretionary and discretionary closures, which are presented in a lease as stipulations. These areas are determined to be unsuitable for leasing and development because of unique, highly valued, complex, or legally protected resources; conflicting land uses; or because they pose substantial hazards to exploration, development, and production.

Nondiscretionary closures include those lands that must be closed to leasing for reasons beyond the discretion of the BLM. These are lands specially precluded from fluid minerals leasing by law, regulations, Secretarial or Executive Order, or that have been otherwise formally closed by decisions reached beyond the scope of the BLM. Examples of nondiscretionary closures in the Planning Area include the White Sands Military Range and other military installations; White Sands National Monument and other National Park Service land; towns, villages, and incorporated cities. Within BLM's Decision Area, examples of nondiscretionary closures include public water reserves and Wilderness Study Areas.

Discretionary closures include those lands where the BLM has determined that fluid minerals leasing, even with the most restrictive stipulations, would not adequately protect other resources, values, or land uses. Examples of discretionary closures in BLM's Decision Area are the Areas of Critical Environmental Concern (ACECs).

### **Open to Leasing**

As mentioned above, lands open to leasing are open with stipulations or open with standard lease terms and conditions as described below.

### **Open to Leasing with Standard Terms and Conditions**

Areas may be open to leasing with no specific management decisions defined in a Resource Management Plan (RMP). However, these areas are subject to the lease terms and conditions as defined on the lease form (Form 3100-11, Offer to Lease and Lease for Oil and Gas; and Form 3200-24, Offer to Lease and Lease for Geothermal Resources; copies at the end of Appendix A-II). The forms include lease terms and conditions, which cover subjects such as bonding, rentals, royalties, inspections, and safety. Of particular interest here is Section 6, Conduct of Operations, of the lease form, which establishes the general and reasonable requirements for the protection of surface resources and is referred to as "standard lease terms and conditions." Standard lease terms and conditions may not require the lessee to relocate drilling rigs or supporting facilities by more than 656 feet (200 meters), require that operations be sited off the leasehold, or prohibit new surface-disturbing operations for more than 60 days (43 CFR 3101.I-2). Section 6 also provides authority for interim and final reclamation measures to minimize adverse environmental impacts.

In addition, the standard lease terms and conditions specifically require that the lessee contact the lessor prior to disturbing the surface. They also specify that the lessee may be required to complete inventories or special studies in accordance with NEPA and compliance with the Endangered Species

Act of 1973, National Historic Preservation Act of 1966, and other applicable laws (refer to Appendix A-I).

## **Open to Leasing with Stipulations**

Constraints in the form of stipulations are conditions included in a lease when environmental and planning analyses have demonstrated that additional and more stringent environmental protection is needed. Stipulations are provisions that modify the standard lease rights and are attached and made part of the lease.

It is BLM policy that the use of stipulations should be considered appropriate only when they are both necessary and justifiable. A stipulation is justifiable if there are resources, values, or users present that (1) cannot coexist with fluid minerals operations, or (2) cannot be adequately managed or accommodated on other lands for the duration of the operation, and (3) would provide greater benefits to the public than those of fluid minerals operations.

Waivers, exceptions, and modifications to existing lease stipulations can be granted if circumstances or relative resource values change or if the lessee demonstrates that operations can be conducted without causing unacceptable impacts. A waiver is a one-time exemption to a lease stipulation (i.e., the stipulation no longer applies anywhere in the leasehold). An exception is a one-time exemption to a lease stipulation, which is determined on a case-by-case basis (the stipulation would continue to apply to all other sites within the leasehold to which restrictive criteria apply). A modification is a change to the provisions of a lease stipulation, either temporary or for the term of the lease. If the Authorized Officer determines, prior to lease issuance, that a stipulation involves an issue of major concern, modification or waiver of the stipulation is subject to public review (43 CFR 3101.1-4).

Lands currently under lease will not be affected by the stipulations identified in this RMPA. New leases will be required to adhere to the stipulations as identified in the RMPA upon completion of the RMPA.

The three types of lease stipulations are no surface occupancy, controlled surface use, and timing limitation, as described below.

- # No Surface Occupancy—A stipulation of no surface occupancy (NSO) is intended for use only when other stipulations are determined to be insufficient to adequately protect the public interest. As implied, the surface of a given area cannot be occupied. The surface areas are determined to be unsuitable because of unique, highly valued, complex, or legally protected resources; significant potential conflict with current or planned land use; and/or areas posing

hazards to fluid minerals activities. Generally, NSO is considered feasible only for areas that could be directionally drilled. Examples of NSO include Recreation and Public Purpose Leases and Patents and Ecological Study Plots.

- # Controlled Surface Use—A stipulation of controlled surface use (CSU) is intended to be used when lease occupancy and use generally are allowed on all portions of the lease year-round, but because of special values, or resource concerns, specific lease activities require strict control. CSU is used to identify constraints on surface use or operations that may otherwise exceed the mitigation provided by Section 6 of the standard lease terms and conditions and the regulations and operating orders. CSU is less restrictive than stipulations of NSO or timing limitation, which prohibit all occupancy and use on all or portions of a lease for all or portions of a year. The use of CSU should be limited to areas where restrictions are necessary for specific types of activities rather than all activity. An example of CSU is to limit certain activities in the vicinity of a sensitive resource (e.g., avoidance of potential nest sites).
- # Timing Limitation—A stipulation of timing limitation (TL) (often called seasonal) prohibits fluid minerals activities for a specific period of time less than one year. This type of stipulation is intended to limit activities to time periods that lessen the impact on resources or land uses to provide additional protection in areas that may have important seasonal use. Examples of TL include (1) allowing no drilling during a nesting season, and (2) evacuating the White Sands Missile Range Safety Evacuation Zone prior to and during missile firings.

As explained in Section 2.3 of Chapter 2, three alternatives were examined: No-action Alternative, Alternative A, and Alternative B. Table A-8, which follows, summarizes the management direction by resource concern for each alternative. Table A-8, similar to Table 2-9 in Chapter 2, provides more descriptive information about the resource concerns than does the abbreviated Table 2-9.

**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern   | Description and Existing Management Guidance   | Range of Alternatives to Modify the Existing Management Situation                         |   |   |
|--|--|---|---|---|
|  |  | No Action (Existing Management)   | A   | B   |
| Lands and Access   |  |   |   |   |
| White Sands Missile Range Safety Evacuation Zone (Map 3-2) | These lands shall be evacuated on days that missiles are to be fired. Memorandum of Understanding between Department of the Army and Department of the Interior, January 1960. Existing management imposes a timing limitation (RMP Decision OGG-1); approximately 311,410 acres.  | Timing limitation   | Timing limitation   | Timing limitation   |
| Old Air Force bombing and gunnery range (Map 3-2)          | Subsurface use of lands used as impact areas of the old Air Force bombing and gunnery range is prohibited (PLO 2569); approximately 8,264 acres (Ts. 23, 24 S., Rs.16, 17, 18 E; NMPM). No action has been taken to remove the restriction (RMP Decision L-2). Leasing is precluded in these areas. Surface use only is allowed until such time as the restriction is removed. | Nondiscretionary closure; subsurface closed until such time as the restriction is removed | Nondiscretionary closure; subsurface closed until such time as the restriction is removed | Nondiscretionary closure; subsurface closed until such time as the restriction is removed |
| Caballo Mountain Communication Site (Map 3-2)              | Existing management imposes no surface occupancy in SW 1/4, section 26, T. 15 S., R. 4 W., NMPM (RMP Decision OGG-3); approximately 161 acres. The site recently has been surveyed for its accurate geographical location. Development has expanded south into the NE 1/4 of section 35.   | No surface occupancy  | Standard lease terms and conditions (must protect capital investments)                    | Standard lease terms and conditions (must protect capital investments)                    |



**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern  | Description and Existing Management Guidance   | Range of Alternatives to Modify the Existing Management Situation |   |   |
|---|--|---|---|---|
|   |  | No Action (Existing Management)                                   | A   | B   |
| Recreation and Public Purpose (R&PP)<br>Leases and Patents<br>(various locations) | Under the Recreation and Public Purpose (R&PP) Act, BLM has the authority to lease or patent land to governmental and nonprofit entities for public parks, building sites, or other public purposes. Existing management imposes no surface occupancy (unless waived) to protect R&PP facilities (RMP Decision OGG-10). Approximately 1,799 acres. | No surface occupancy (unless waived)                              | No surface occupancy (unless waived)  | No surface occupancy (unless waived)  |
| Public Water Reserves<br>(about 40 acres each, various locations)                 | Closed to leasing by Executive Order (EO) (PWR 107, 1926); approximately 693 acres total.  | Nondiscretionary closure  | Nondiscretionary closure  | Nondiscretionary closure  |
| Community Pit 7<br>(Map 3-2)  | Public land generally is open to mineral entry and development except for specific areas withdrawn from mineral location (LM-1); approximately 30 acres (Section 9, T. 20 S., R. 09 E., NMPM). Locatable mineral activities are regulated by BLM to prevent unnecessary or undue degradation of the land.  | Standard lease terms and conditions                               | No surface occupancy  | No surface occupancy  |
| Air navigation site   | Secretarial Order 125; approximately 117 acres (Sections 17 and 18, T. 13 S., R. 01 W., NMPM).   | Nondiscretionary closure  | Nondiscretionary closure  | Nondiscretionary closure  |
| Berrendo Administrative Camp Site   | BLM administrative site; approximately 40 acres (Section 9, T. 23 S., R. 15 E., NMPM).   | Standard lease terms and conditions                               | Controlled surface use (avoid structures and helipad to protect capital investment) | Controlled surface use (avoid structures and helipad to protect capital investment) |

**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern   | Description and Existing Management Guidance   | Range of Alternatives to Modify the Existing Management Situation |  |   |
|--|--|---|--|---|
|  |  | No Action (Existing Management)                                   | A  | B   |
| Watersheds and Water Resources   |  |   |  |   |
| Highly erosive or fragile soils:<br>Nickel-Bluepoint<br>Alamogordo-Gypsum<br>Land-Aztec<br>Prelo-Tome-Largo<br>Holloman-Gypsum<br>Land-Yesum (Map 3-5) | General management guidelines are to manage soils to maintain productivity and minimize erosion and stabilize the resources. Management activities in areas of high erosion potential will be designed to minimize surface disturbance to the extent possible. Approximately 1,050,348 acres in the Planning Area and 310,367 acres BLM’s Decision Area. | Standard lease terms and conditions                               | Controlled surface use                             | Controlled surface use                            |
| Riparian/<br>Wetlands/Playas<br>(Map 3-7)  | Objective is to avoid impacts on wetlands in compliance with Section 404 of the Clean Water Act, and to riparian habitats in accordance with BLM guidelines.   | Standard lease terms and conditions                               | No surface occupancy within 0.25 mile (400 meters) | No surface occupancy within 0.5 mile (804 meters) |

**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern               | Description and Existing Management Guidance  | Range of Alternatives to Modify the Existing Management Situation |                        |  |
|--------------------------------|---|---|------------------------|--|
|                                |   | No Action (Existing Management)                                   | A                      | B  |
| Watershed Areas Area (Map 3-5) | <p>Limited ORV use on approximately to protect watershed values</p> <p># Wind and Chess Draw (Cornudas Mountains) Watershed Area, approximately 34,499 acres (RMP Decisions W-1 and VR-3) ) (Ts. 25, 26 S., Rs. 13-16 E., NMPM). Note: within this area, the Cornudas, Alamo, and Wind Mountains have all been designated as ACECs, and are closed to leasing.</p> <p># Moccasin and Otto Draw (southwest of Piñon) Watershed, approximately 13,662 acres (RMP Decision W-2) (Ts. 20, 21 S., Rs. 14, 15 E., NMPM).</p> <p># Watershed area east of Tularosa and south of Tularosa River, approximately 17,046 acres (RMP Decision W-3) (Ts. 14, 15, S., Rs. 09, 10 E., NMPM).</p> <p># Three Rivers (north of Tularosa) Watershed, approximately 12,741 acres (RMP Decision W-4) (T. 11 S., Rs. 09, 9½ E., NMPM).</p> <p># Watershed area east of Crow Flats, approximately 14,890 acres (RMP Decision W-5) (Ts. 24, 25, 26 S., Rs. 18, 19 E., NMPM).</p> | Standard lease terms and conditions                               | Controlled surface use | Discretionary closure (and no geophysical exploration allowed) |

**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern                 | Description and Existing Management Guidance   | Range of Alternatives to Modify the Existing Management Situation |                      |                      |
|----------------------------------|--|---|----------------------|----------------------|
|                                  |  | No Action (Existing Management)                                   | A                    | B                    |
| Vegetation                       |  |   |                      |                      |
| Ecological Study Plots (Map 3-7) | Existing management imposes no surface occupancy<br># Engle Ecological Study Plot, approximately 40 acres (RMP Decision OGG-4, Public Land Order 4038), (Section 35, T. 13. S., R. 02 W., NMPM)<br># Cuchillo Ecological Study Plot, approximately 1,471 acres (RMP Decision OGG-4, Public Land Order 4038). (Sections 10, 11, 14, T. 12 S., R. 05 W., NMPM)<br># Nordstrom Ecological Study Plot, approximately 1,391 acres (RMP Decision OGG-4, Public Land Order 4038), (Sections 27, 28, 33, 34, 35, T. 16 S., R. 05 W., NMPM)<br># Trujillo Ecological Study Plot, approximately 39 acres (RMP Decision OGG-4, Public Land Order 4038), (Section 3, T. 12 S., R. 06 W., NMPM)<br># Danley Ecological Study Plot, approximately 179 acres (RMP Decision OGG-4, Public Land Order 4038), (Section 18, T. 13 S., R. 09 E., NMPM)<br># Lee Ecological Study Plot, approximately 40 acres (RMP Decision OGG-4, Public Land Order 4038), (Section 21, T. 23 S., R. 13 E., NMPM) | No surface occupancy  | No surface occupancy | No surface occupancy |

**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern                    | Description and Existing Management Guidance  | Range of Alternatives to Modify the Existing Management Situation |                        |                        |
|-------------------------------------|---|---|------------------------|------------------------|
|                                     |   | No Action (Existing Management)                                   | A                      | B                      |
| Wildlife and Special Status Species |   |   |                        |                        |
| Big Game Habitat Areas<br>(Map 3-7) | Objective is to provide adequate habitat for big game.<br># Otero Mesa Habitat Area (pronghorn, desert grasslands habitat), approximately 427,275 acres (RMP Decision WL-4) (Ts. 21-26 S., Rs. 10-16 E., NMPM)<br># Nutt and White Sands Antelope Areas (Jornada Plain), approximately 529,559 total acres (RMP Decision WL-8), (Nutt Antelope Area is T. 19 S., Rs. 07, 06 W., NMPM, 75,850 acres; White Sands Antelope Area is Ts. 10-17 S., Rs. 01-04 W. and 01, 02 E., NMPM, approximately 453,709 acres).<br># Caballo Mountains Deer Habitat Area, approximately 93,179 acres (RMP Decision WL-5), (Ts. 14-17 S., Rs. 03, 04 W., NMPM)<br># Sacramento Escarpment Deer Habitat Area, approximately 170,275 acres (RMP Decision WL-6), (Ts. 11-15 and 17, 18 S., Rs. 08-10 E., NMPM). The southern portion of this area coincides with the Sacramento Escarpment ACEC. | Standard lease terms and conditions                               | Controlled surface use | Controlled surface use |

**TABLE A-8  
PLAN ALTERNATIVES CONSIDERED**

| Resource Concern   | Description and Existing Management Guidance  | Range of Alternatives to Modify the Existing Management Situation |                                     |  |
|--|---|---|-------------------------------------|--|
|  |   | No Action (Existing Management)                                   | A                                   | B  |
| Crucial habitats: grasslands, montane scrub, and woodland/forest (Map 3-7) | In crucial habitats, habitat fragmentation has many negative effects on biota: loss of total habitat area, creation of smaller, more isolated habitat patches, changes in landscape matrix, increases in disturbance - adapted (weedy) and exotic species, and increased susceptibility to random environmental change (e.g., climatic variation). These factors operate in a series of feedback loops that affect population structure and the genetic health of the various species. Approximately 729,457 acres total. | Standard lease terms and conditions                               | Standard lease terms and conditions | Standard lease terms and conditions                    |
| Otero Mesa and Nutt desert grassland habitat areas                         | Purpose is to protect portions of the remaining grassland community by minimizing habitat fragmentation. Approximately 132,471 acres (Otero Mesa area is 116,206 acres and Nutt area is 16,265).  | Standard lease terms and conditions                               | No surface occupancy                | No surface occupancy                                   |
| Special Status Species (Map 3-8)   | Federally listed threatened and endangered species, species proposed for Federal listing, Federal candidates, BLM sensitive species, and State-listed species. All exploration and development activities will follow current requirements of Section 7 of the Endangered Species Act for Federally listed and proposed species, and current BLM policy for management of State-listed and BLM sensitive species.   | Standard lease terms and conditions                               | Controlled surface use              | Discretionary closure on occupied or essential habitat |

**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern                                | Description and Existing Management Guidance   | Range of Alternatives to Modify the Existing Management Situation |  |  |
|---|--|---|--|--|
|   |  | No Action (Existing Management)                                   | A  | B  |
| Bighorn sheep                                   | Sites with suitable habitat parameters for bighorn sheep are located in the Caballo, Sacramento, Guadalupe, Brokeoff, and Cornudas Mountains. Approximately 199,020 acres total. The Caballo Mountains provide a potential movement corridor for bighorn sheep from Fra Cristobal Mountains.   | Standard lease terms and conditions                               | Controlled surface use and timing limitation | Controlled surface use and timing limitation |
| Percha Creek Riparian Habitat Area<br>(Map 3-8) | Purpose is to improve and protect the riparian area along Percha Creek for wildlife habitat (mainly for Federally endangered southwest willow flycatcher), watershed values, recreation, and visual quality. Currently part of a 940-acre area nominated as an ACEC. Existing management (RMP Decisions WL-2 and R-4) limits ORV use on approximately 276 acres to existing roads and trails ( <i>Federal Register</i> August 3, 1989) (T. 16 S., R. 07 W., NMPM). | Standard lease terms and conditions                               | No surface occupancy                         | Discretionary closure                        |
| <b>Cultural Resources</b>                       |  |   |  |  |
| Lake Valley Historic Townsite<br>(Map 3-10)     | The townsite and schoolhouse are both listed on the State Register of Cultural Properties. The site is eligible to the National Register. Protection is through existing cultural resources regulations. The buildings are being stabilized and the site is open for public visitation. Approximately 140 acres (T. 18 S., R. 07 W., NMPM).  | Standard lease terms and conditions                               | No surface occupancy                         | Discretionary closure                        |

**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern                                       | Description and Existing Management Guidance   | Range of Alternatives to Modify the Existing Management Situation                 |   |  |
|--|--|---|---|--|
|  |  | No Action (Existing Management)   | A   | B  |
| Rattlesnake Hill Archaeological District<br>(Map 3-10) | Existing management imposes controlled surface use. Vehicular use is limited to existing roads and trails in order to prevent damage to cultural resources (RMP Decision OGG-5). Existing management imposes no surface occupancy on Section 21, T. 22 S., R. 8 E., NMPM in order to protect sites listed on the State Register of Historic Places and sites proposed for nomination to the National Register of Historic Places (RMP Decision OGG-6). Closed to ORV activity on approximately 889 acres to protect cultural resources (RMP Decision C-2, <i>Federal Register</i> August 3, 1989). | No surface occupancy - Section 21, T. 22S., R.8E., NMPM; approximately 640 acres. | Discretionary closure - on approximately 889 acres and no surface occupancy on remainder of area approximately 2,726 acres. | Discretionary closure - Area equivalent to OGG-5, OGG-6, C-2, approximately 3,614 acres. |
| Lone Butte<br>(Map 3-10)                               | Limited ORV use on approximately 352 acres to protect cultural resources (RMP Decision C-4, <i>Federal Register</i> August 3, 1989) (Section 6, T. 19 S., R. 09 E., NMPM).   | Standard lease terms and conditions   | No surface occupancy  | No surface occupancy   |
| Jarilla Mountains<br>(Map 3-10)                        | Closed to ORV use on approximately 803 acres to protect cultural resources (RMP Decision C-5, <i>Federal Register</i> August 3, 1989) (T. 20 S., R. 08 E., NMPM).  | Standard lease terms and conditions   | Controlled surface use  | Discretionary closure  |



**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern                              | Description and Existing Management Guidance  | Range of Alternatives to Modify the Existing Management Situation   |   |  |
|---|---|---|---|--|
|   |   | No Action (Existing Management)   | A   | B  |
| Mormon Battalion Trail<br>(Maps 3-9 and 3-10) | Protection is through existing cultural resources regulations (Ts. 18, 19 S., Rs. 05-07 W., NMPM).  | Standard lease terms and conditions   | Controlled surface use -<br>No surface-disturbing activities within 0.25 mile (400 meters) from each side of the trail; approximately 17,724 acres. Existing disturbance points could be used to cross the trail. | No surface occupancy within 0.25 mile (400 meters) from each side of the entire trail; approximately 17,724 acres. Existing disturbance points could be used to cross the trail. |
| Other historic trails<br>(Maps 3-9 and 3-10)  | No surface-disturbing activities are allowed in the area 0.25 mile (400 meters) from each side of the well-preserved segments of the trail on public land to protect cultural resources.<br># Butterfield Trail (RMP Decision C-6), (Ts. 25, 26 S., Rs. 12-14 E., NMPM)<br># Jornada del Muerto Trail (RMP Decision C-7), (Ts. 13-20 S., Rs. 01, 02 W., NMPM) | Controlled surface use – No surface-disturbing activities within 0.25 mile (400 meters) from each side of the well-preserved segments of trail. | Controlled surface use -<br>No surface-disturbing activities within 0.25 mile (400 meters) from each side of the entire trail. Existing disturbance points could be used to cross the trail.                      | No surface occupancy within 0.25 mile (400 meters) from each side of the entire trail. Existing disturbance points could be used to cross the trail.                             |

**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern                | Description and Existing Management Guidance  | Range of Alternatives to Modify the Existing Management Situation |  |   |
|---------------------------------|---|---|--|---|
|                                 |   | No Action (Existing Management)                                   | A  | B   |
| Recreation and Visual Resources |   |   |  |   |
| Tularosa River (Map 3-10)       | Existing management imposes no surface occupancy to protect recreational opportunities along the Tularosa River (RMP Decision OGG-8, 119 acres). BLM gained additional acreage along the creek through the Tularosa Land Exchange. The acquired acreage along the Tularosa (213 acres) is not open to leasing. (Sections 29, 31, 32, T.13S., R.11E., NMPM.)   | No surface occupancy (on RMP Decision OGG-8 area)                 | No surface occupancy (on RMP Decision OGG-8)   | Discretionary closure (on RMP Decision OGG-8 area.)             |
| Red Sands ORV Area (Map 3-10)   | Red Sands ORV Area is a trail network within a sand dune area between Alamogordo and Orogrande; approximately 33,600 acres. The trails have been surveyed for cultural resources, and a plan to mitigate impacts on cultural resources is being implemented. Subsequently, the trails will be signed to encourage use of established trails and discourage proliferation of new trails (Ts. 19-21 S., Rs. 08, 09 E., NMPM). | Standard lease terms and conditions                               | Timing limitation - No drilling or seismic operations on weekends and for one week a year when the annual race occurs. | Discretionary closure (and no geophysical exploration allowed). |
| VRM Class I (Map 3-9)           | Natural and ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention. This classification is applied to wilderness areas, wild and scenic rivers, and other similar situations. The only BLM Class I VRM areas are ACECs, which are already closed to leasing. Approximately 10,126 acres total.                            | Discretionary closure   | Discretionary closure  | Discretionary closure   |

**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern           | Description and Existing Management Guidance  | Range of Alternatives to Modify the Existing Management Situation |                                     |                                     |
|----------------------------|---|---|-------------------------------------|-------------------------------------|
|                            |   | No Action (Existing Management)                                   | A                                   | B                                   |
| VRM Class II<br>(Map 3-9)  | Changes in any of the basic elements caused by a management activity should not be evident in the characteristic landscape. Contrasts are seen, but must not attract attention. Approximately 175,737 acres total.    | Standard lease terms and conditions                               | Controlled surface use              | Discretionary closure               |
| VRM Class III<br>(Map 3-9) | Contrast to the basic elements, caused by a management activity is evident, but should remain subordinate to the existing landscape. Approximately 309,797 acres.   | Standard lease terms and conditions                               | Standard lease terms and conditions | Controlled surface use              |
| VRM Class IV<br>(Map 3-9)  | Any contrast attracts attention and is a dominant feature of the landscape in terms of scale, but it should repeat the form, line, color, and texture of the characteristic landscape. Approximately 1,522,972 acres. | Standard lease terms and conditions                               | Standard lease terms and conditions | Standard lease terms and conditions |

**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern   | Description and Existing Management Guidance   | Range of Alternatives to Modify the Existing Management Situation |                        |   |
|--|--|---|------------------------|---|
|  |  | No Action (Existing Management)                                   | A                      | B   |
| VRM and ORV limited areas<br>(Map 3-10)                    | <p>Limited ORV use for protection of visual resources.</p> <p># Brokeoff Mountains VRM and ORV limited area, approximately 11,647 acres (RMP Decision VR-2) (T. 24-26 S., R. 18, 19 E., NMPM)</p> <p># Cornudas Mountains VRM and ORV limited areas (protection of watershed values and visual resources), approximately 2,533 acres (RMP Decisions W-1 and VR-3). Note: within this area, the Cornudas, Alamo, and Wind Mountains have all been designated as ACECs, closed to leasing (Ts. 25, 26 S., Rs. 13-15 E., NMPM).</p> <p># Cuchillo Mountains VRM and ORV limited areas, approximately 5,947 acres (RMP Decision VR-4) (T. 12 S., R. 11 W., NMPM)</p> | Standard lease terms and conditions                               | Controlled surface use | Discretionary closure (and no geophysical exploration allowed). |
| Cuchillo Mountains Piñon Nut Collection Area<br>(Map 3-10) | The stands of piñon pine trees in the Cuchillo Mountains are maintained as a nut collection area, approximately 14,863 acres (RMP Decision R-2) (Ts. 10-12 S., R. 07, 08 W., NMPM).  | Standard lease terms and conditions                               | Controlled surface use | Discretionary closure   |

**TABLE A-8  
PLAN ALTERNATIVES CONSIDERED**

| Resource Concern                          | Description and Existing Management Guidance   | Range of Alternatives to Modify the Existing Management Situation |   |   |
|---|--|---|---|---|
|   |  | No Action (Existing Management)                                   | A   | B   |
| Lake Valley Back-country Byway (Map 3-10) | State Highway 152 from junction of Interstate 25, 18 miles south of Truth or Consequences, then west on Highway 152 to the historic town of Hillsboro. The Byway route then turns south onto Highway 27 towards Lake Valley and Nutt. The highway offers scenic views of the Black Range, Caballo, and Las Uvas Mountains and Cooke's Peak. Also, the route has high historic values founded on the basis of ranching and mining (Ts. 15-19 S., Rs. 05-07 W., NMPM). | Standard lease terms and conditions                               | Controlled surface use 0.25 mile (400 meters) to each side of the Byway, approximately 15,039 acres; short-term impacts allowed as long as the longer-term impacts (more than one year) are consistent with the VRM objectives for the Byway. | Discretionary closure within the foreground (0.25 mile [400 meters]), approximately 15,039 acres; no surface occupancy within the middle-ground (0.25 to 0.5 mile [400 to 800 meters]), approximately 15,214 acres; short-term impacts allowed in the distance-ground (0.5 to 1 mile [800 meters]), approximately 30,554 acres, as long as the long-term impacts (more than one year) are consistent with the VRM objectives for the Byway. |

**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern  | Description and Existing Management Guidance   | Range of Alternatives to Modify the Existing Management Situation            |  |  |
|---|--|--|--|--|
|   |  | No Action (Existing Management)  | A  | B  |
| Special Management Areas, Areas of Multi-Resource Management Concerns |  |  |  |  |
| McGregor Range (not in BLM's Decision Area) (Map 3-10)                | The McGregor Range management decisions (McGregor Range RMP Amendment, September 1990) are being carried forward unchanged.<br>The withdrawal expires in 2001; however, it already has been extended to 2026. Approximately 606,198 acres. | The McGregor Range management decisions are being carried forward unchanged. | The McGregor Range management decisions are being carried forward unchanged. | The McGregor Range management decisions are being carried forward unchanged. |

**TABLE A-8  
PLAN ALTERNATIVES CONSIDERED**

| Resource Concern                           | Description and Existing Management Guidance  | Range of Alternatives to Modify the Existing Management Situation  |  |  |
|--|---|--|--|--|
|  |   | No Action (Existing Management)  | A  | B  |
| Wilderness Study Areas (WSA)<br>(Map 3-10) | <p>At present, WSAs are closed to leasing by statute and will continue to be managed in compliance with the Interim Management Policy and Guidelines for Lands Under Wilderness Review (BLM 1979, 1983) until they are reviewed and acted upon by Congress (RMP Decision OGG-2). If the WSA were designated as Wilderness, the area would remain closed to leasing and managed in compliance with the Wilderness Management Policy (BLM 1981).</p> <p># Jornada del Muerto WSA, approximately 4,320 acres (T. 10 S., Rs. 01, 02 E., NMPM) is recommended as suitable, based on the area's high quality wilderness values, special geologic features, wildlife and scientific values, lack of other resource users, and ease of manageability. If the WSA were not designated as Wilderness, its visual class would revert to Class III.</p> <p># Brokeoff Mountains WSA, approximately 30,838 acres (Ts. 22-26 S., Rs. 17-19 E., NMPM). If the area were not a WSA or wilderness, the area would still be VRM Class II.</p> | Nondiscretionary closure. However, if the WSA is not designated as Wilderness, the area would be subject to standard lease terms and conditions. | Nondiscretionary closure. However, if the WSA is not designated as Wilderness, the area would be managed with controlled surface use to protect its resource values. Short-term impacts would be allowed as long as the longer-term impacts (more than one year) are consistent with the VRM objectives. | Nondiscretionary closure. However, if the WSA is not designated as Wilderness, the area would be discretionarily closed to leasing and geophysical explorations would not be allowed to protect its resource values. |

**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern   | Description and Existing Management Guidance  | Range of Alternatives to Modify the Existing Management Situation |                       |                       |
|--|---|---|-----------------------|-----------------------|
|  |   | No Action (Existing Management)                                   | A                     | B                     |
| Areas of Critical Environmental Concern (ACEC)<br>(Map 3-10) | <p>The 1997 Otero County ACEC RMPA decisions are being carried forward unchanged, including the decision to close these areas to leasing and geophysical exploration.</p> <p># Three Rivers ACEC, approximately 1,130 acres (T. 11 S., R. 9½ E., NMPM)</p> <p># Sacramento Escarpment ACEC, approximately 5,365 acres (Ts. 17-19 S., R. 10 E., NMPM)</p> <p># Cornudas Mountain ACEC, approximately 861 acres (T. 25 S., R. 14 E., NMPM)</p> <p># Alamo Mountain ACEC, approximately 2,525 acres (T. 26 S., R. 13 E., NMPM)</p> <p># Wind Mountain ACEC, approximately 2,472 acres (T. 26 S., R. 14 E., NMPM)</p> <p># Alkali Lakes ACEC, approximately 6,903 acres (T. 26 S., Rs. 18, 19 E., NMPM)</p> | Discretionary closure   | Discretionary closure | Discretionary closure |



**TABLE A-8**  
**PLAN ALTERNATIVES CONSIDERED**

| Resource Concern             | Description and Existing Management Guidance   | Range of Alternatives to Modify the Existing Management Situation |                        |                       |
|------------------------------|--|---|------------------------|-----------------------|
|                              |  | No Action (Existing Management)                                   | A                      | B                     |
| Nominated ACECs<br>(Map 3-8) | <p>Nominated as ACECs to protect resources as described below. BLM policy (Manual 1613.21E) is to manage nominated ACECs to maintain the conditions or resources of concern “until the area is fully evaluated through the resource management planning process.”</p> <ul style="list-style-type: none"> <li># Brokeoff Mountains nominated ACEC, approximately 3,834 acres, (T. 25 S., R. 19 E., NMPM)</li> <li># Caballo Mountains nominated ACEC, approximately 2,213 acres (T. 16 S., Rs. 03, 04 W., NMPM)</li> <li># Jarilla Mountains nominated ACEC, approximately 7,032 acres (Ts. 21, 22, S., R. 08 E., NMPM),</li> <li># Mud Mountain nominated ACEC, approximately 2,580 acres (T. 13 S., Rs. 04, 05 W., NMPM)</li> <li># Percha Creek nominated ACEC, approximately 940 acres (T. 16 S., R. 07 W., NMPM) (Includes 276-acre Percha Creek Riparian Habitat Area.)</li> <li># Sacramento Mountains nominated ACEC, approximately 2,381 acres (Ts. 13, 14 S., R. 11 E., NMPM)</li> <li># Six Shooter Canyon nominated ACEC, approximately 1,060 acres (T. 25 S., Rs. 21, 22 E., NMPM)</li> <li># Pup Canyon nominated ACEC, approximately 3,677 acres (T. 22 S., R. 18 E., NMPM)</li> </ul> | Standard lease terms and conditions                               | Controlled surface use | Discretionary closure |

## **APPENDIX A-VI STIPULATION FORMS**

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This appendix provides a list (Table A-9) of the resource concerns within BLM's Decision Area by the type of leasing restriction under BLM's preferred alternative (Alternative A). Leasing stipulation forms. Each form includes the stipulation; location(s); and waivers, exceptions, and modifications as appropriate, follow Table A-9 in the same order.

**TABLE A-9  
RESOURCE CONCERNS BY TYPE OF RESTRICTION**

**Closed to Leasing - Nondiscretionary Closure**

- # Old Air Force bombing and gunnery range
- # Public water reserves
- # Air navigation site
- # Wilderness Study Areas (WSA) (2)

**Closed to Leasing - Discretionary Closures**

- # Rattlesnake Hill Archaeological District
- # Visual Resource Management (VRM) Class I areas
- # Areas of Critical Environmental Concern (ACECs) (6)

**Open to Leasing - No Surface Occupancy**

- # Recreation and Public Purpose patents and leases
- # Community Pit 7 (Escondido)
- # Riparian/Other Wetlands/Playas
- # Ecological study plots (6)
- # Desert grassland habitat (Nutt and Otero Mesa)
- # Percha Creek Riparian Habitat Area
- # Lake Valley Historic Townsite
- # Lone Butte
- # Tularosa River

**Open to Leasing - Controlled Surface Use and Timing Limitation**

- # Bighorn sheep habitat

**TABLE A-9**  
**RESOURCE CONCERNS BY TYPE OF RESTRICTION**

**Open to Leasing - Controlled Surface Use**

- # Berrendo Administrative Camp Site
- # Highly erosive or fragile soils
- # Watershed areas (5)
- # Big Game Habitat Areas
- # Special status species habitats
- # Jarilla Mountains
- # Designated historic trails (Mormon Battalion, Butterfield, and Jornada del Muerto)
- # VRM Class II areas
- # VRM and ORV limited areas (Brokeoff, Cornudas, and Cuchillo Mountains)
- # Cuchillo Mountains Piñon Nut Collection Area
- # Lake Valley Back-country Byway
- # Nominated ACECs (8)

**Open to Leasing - Timing Limitation**

- # White Sands Missile Range Safety Evacuation Zone
- # Red Sands ORV Area

## **CLOSED TO LEASING - NONDISCRETIONARY CLOSURES**

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
Nondiscretionary Closure**

**RESOURCE CONCERN: Old Air Force Bombing and Gunnery Range**

**Location:** Ts. 23, 24 S., Rs. 16, 17, 18 E., NMPM (approximately 8,264 acres)

**Stipulation:** Nondiscretionary closure; subsurface closed until such time as the restriction is removed

**Objective:** To ensure public safety of the former impact areas for the bombing and gunnery range

**Previous Management:** Public Land Order (PLO) 2569, RMP Decision L-2

**Waiver:** None

**Exception:** None

**Modification:** May occur when action is taken to remove the restriction prohibiting subsurface use of areas not open by PLO 2569. The stipulation cannot be modified at the local level; authority to modify is at the secretarial level.

**Justification:** Leasing is precluded in this area to ensure protection from previous military activities. Under standard lease terms and conditions, the requirements imposed for this area would remain the same.

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
Nondiscretionary Closure**

**RESOURCE CONCERN: Public Water Reserves**

**Location:** Various (must confer with BLM) (approximately 693 acres total)

**Stipulation:** Nondiscretionary closure

**Objective:** To ensure that the water resources within designated areas remain reserved for public use

**Previous Management:** PWR 107, 1926

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** Public water reserves are closed to leasing by Executive Order (Order of Withdrawal, April 17, 1926). Under standard lease terms and conditions, the reserves also would be closed.

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
Nondiscretionary Closure**

**RESOURCE CONCERN: Air Navigation Site**

**Location:** Sections 17 and 18, T. 13 S., R. 01 W., NMPM (approximately 117 acres)

**Stipulation:** Nondiscretionary closure

**Objective:** To provide public land for use as an air navigation facility

**Previous Management:** Secretarial Order, Air Navigation Site Withdrawal No. 125

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** Leasing is precluded in this area by Secretarial Order to protect the air navigation facility.

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
Nondiscretionary Closure**

**RESOURCE CONCERN: Wilderness Study Areas (WSA)**

**# Jornada del Muerto WSA**

**Location:** T. 10 S., Rs. 01, 02 E., NMPM (approximately 4,320 acres)

**# Brokeoff Mountains WSA**

**Location:** Ts. 22-26 S., Rs. 17-19 E., NMPM (approximately 30,838 acres)

**Stipulation:** Nondiscretionary closure

**Objective:** To protect the high-quality wilderness values of this area

**Previous Management:** 1986 RMP Decision OGG-2, Interim Policy and Guidelines for Lands Under Wilderness Review

**Waiver:** None

**Exception:** If not designated as wilderness, the area would be managed with controlled surface use to protect resource values. Short-term impacts would be allowed as long as the long-term impacts (one year) are consistent with the visual resource management (VRM) objectives. Reclamation must occur as soon as possible. Conditions of approval would be imposed such as paint color, judicious siting, use of closed pits, and reducing allowable pad size to less than 2 acres on wells subsequent to a "discovery well." Directional drilling may be required to allow multiple wells to be drilled from one pad.

**Modification:** None

**Justification:** That designated wilderness study areas (WSAs) should be closed to leasing is carried forward from the Wilderness Management Policy (BLM 1981). The controlled surface use stipulation for undesignated WSAs is deemed necessary to minimize surface-disturbing activities that would adversely impact resource values in the area. The no lease option and no surface occupancy stipulation are deemed overly restrictive since the BLM allows other surface disturbing resource activities within these areas.



## **CLOSED TO LEASING - DISCRETIONARY CLOSURES**

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
Discretionary Closure and No Surface Occupancy**

**RESOURCE CONCERN: Rattlesnake Hill Archaeological District**

**Location:** Section 21, T. 22 S., R. 8 E., NMPM (approximately 3,614 acres)

**Stipulation:** Discretionary closure and no surface occupancy

- # Closed to leasing on 889 acres
- # No surface occupancy on the remainder of the area (2,725 acres)

**Objective:** To protect cultural resources

**Previous Management:** 1986 RMP Decisions OGG-5, OGG-6, and C-2

**Waiver:** None

**Exception:** If an on-site investigation and surface use plan of operations demonstrates that surface occupancy can be confined to previously disturbed areas and can be accessed via existing roads.

**Modification:** None

**Justification:** The area that is closed to leasing coincides with the area in which off-road vehicle use is prohibited in order to protect cultural resource. Stipulating no surface occupancy is deemed necessary on the remainder of the site, since it is subject to existing cultural resource regulations due to its listing on the State Register of Cultural Properties and eligibility to the National Register. Closing this remaining portion of the area to leasing is not considered appropriate since impacts from operations can be mitigated by requiring no surface occupancy.

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LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
Discretionary Closure**

**RESOURCE CONCERN:** Visual Resources Management (VRM) Class I Areas

**Location:** Various (must confer with BLM) (approximately 10,126 acres total)

**Stipulation:** Discretionary closure

**Objective:** To protect visual resources

**Previous Management:** Closed to leasing by the Otero County Areas of Critical Environmental Concern (ACEC) Resource Management Plan Amendment (RMPA) (BLM 1997)

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** The only Class I areas in the Planning Area are ACECs, which are already closed to leasing per the Otero County ACEC RMPA.

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
Discretionary Closure**

**RESOURCE CONCERN: Areas of Critical Environmental Concern (ACEC)**

- # **Three Rivers ACEC**  
**Location:** T. 11 S., R. 9 ½ E., NMPM (approximately 1,130 acres)
- # **Sacramento Escarpment ACEC**  
**Location:** Ts. 17-19 S., R. 10 E., NMPM (approximately 5,365 acres)
- # **Cornudas Mountas ACEC**  
**Location:** T. 25 S., R. 14 E., NMPM (approximately 861 acres)
- # **Alamo Mountain ACEC**  
**Location:** T. 26 S., R. 13 E., NMPM (approximately 2,525 acres)
- # **Wind Mountain ACEC**  
**Location:** T. 26 S., R. 14 E., NMPM (approximately 2,472 acres)
- # **Alkali Lakes ACEC**  
**Location:** T. 26 S., R. 18, 19 E., NMPM (approximately 6,904 acres)

**Stipulation:** Discretionary closure

**Objective:** To protect the high-quality resource values that have been identified in this area

**Previous Management:** Otero County ACEC RMPA (BLM 1997)

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** The decision to close this area to leasing was made in the Otero County ACEC RMPA (BLM 1997), and these decisions will be carried forward unchanged.

**OPEN TO LEASING - NO SURFACE OCCUPANCY**

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
No Surface Occupancy**

**RESOURCE CONCERN: Recreation and Public Purpose (R&PP) Patents or Leases**

**Location:** Various (must confer with BLM) (approximately 1,799 acres total)

**Stipulation:** No surface occupancy

**Objective:** To ensure compatibility with the existing land uses in R&PP lease or patent areas

**Previous Management:** 1986 RMP Decision OGG-10

**Waiver:** May be granted if fluid mineral development is considered compatible with the land use in a specific R&PP area

**Exception:** Same

**Modification:** Leasing may be prohibited if it is not beneficial to the R&PP. The R&PP use cannot be subservient to another use.

**Justification:** The more restrictive stipulation of no surface occupancy was determined to be appropriate in order to address the possibility for land use conflicts (i.e., R&PP). The ability to grant waivers provides flexibility for less significant land use conflicts. Under standard lease terms and conditions, the stipulation for these areas would be the same.

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LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
No Surface Occupancy**

**RESOURCE CONCERN:** Community Pit 7 (Escondido)

**Location:** Section 9, T. 20 S., R. 09 E., NMPM (approximately 30 acres)

**Stipulation:** No surface occupancy

**Objective:** To permit the continued use of this area by the public for mineral material extraction

**Previous Management:** 1986 RMP Decision LM-1. All activities are prohibited on weekends and for one week in mid-February, due to use of the nearby Red Sands off-road vehicle (ORV) area and an annual motorcycle race.

**Waiver:** None

**Exception:** May be granted if BLM determines that surface lease operations would not cause unnecessary effects on the area of use of the area

**Modification:** None

**Justification:** Stipulating no surface occupancy is needed to protect the mineral materials that are extracted by the public, and regulate the area in order to minimize unnecessary degradation. Under standard lease terms and conditions, the requirements described above would be similar; however, the no surface occupancy stipulation informs the lessee of the resource concern at the time the lease is acquired.

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
No Surface Occupancy**

**RESOURCE CONCERN:** Riparian/Wetlands/Playas

**Location:** Various (must confer with BLM)

**Stipulation:** No surface occupancy within 0.25 mile (400 meters)

**Objective:** To minimize impacts on wetlands in compliance with Section 404 of the Clean Water Act and on riparian habitats in accordance with BLM guidelines

**Previous Management:** Section 404 of the Clean Water Act, general management guidance

**Waiver:** None

**Exception:** None

**Modification:** May be granted to allow some activities within 0.25 mile (400 meters) if it is determined from BLM analysis that there would be no adverse effect and that the area may be reclaimed effectively.

**Justification:** Stipulating controlled surface use is deemed necessary for areas that would not be avoided or protected under standard lease terms and conditions in compliance with the Clean Water Act. Closing such areas to leasing or stipulating no surface occupancy is deemed overly restrictive since controlling surface use could be effective in ensuring these areas are avoided.



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LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
No Surface Occupancy**

**RESOURCE CONCERN: Ecological Study Plots**

**# Engle Ecological Study Plot**

**Location:** Section 35, T. 13 S., R. 02 W., NMPM (approximately 40 acres)

**# Cuchillo Ecological Study Plot**

**Location:** Sections 10, 11, 14, T. 12 S., R. 05 W., NMPM (approximately 1,471 acres)

**# Nordstrom Ecological Study Plot**

**Location:** Sections 27, 28, 33, 34, T. 16 S., R. 05 W., NMPM (approximately 1,391 acres)

**# Trujillo Ecological Study Plot**

**Location:** Section 3, T. 12 S., R. 06 W., NMPM (approximately 39 acres)

**# Danley Ecological Study Plot**

**Location:** Section 18, T. 13 S., R. 09 E., NMPM (approximately 179 acres)

**# Lee Ecological Study Plot**

**Location:** Section 21, T. 23 S., R. 13 E., NMPM (approximately 40 acres)

**Stipulation:** No surface occupancy

**Objective:** To protect the existing ecological resources in this area for research and scientific purposes

**Previous Management:** 1986 RMP Decision OGG-4, Public Land Order 4038

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** Stipulating no surface occupancy is deemed necessary to protect the existing ecological resources. Under standard terms and conditions, the requirements for protecting these areas would be the same.

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program – Stipulation Form  
No Surface Occupancy**

**RESOURCE CONCERN: Desert Grassland Habitat**

**Location:**

Otero Mesa Desert Grassland Area – Ts. 21 S. – 26 S., Rs 10 E. – 16 E., NMPM (coincident with Otero Mesa Habitat Area, refer to BLM mapping, approximately 116,206 acres)

Nutt Desert Grassland Area – Ts. 18 and 19 S., Rs. 5 – 7 W., NMPM (coincident with Nutt Antelope Area, refer to BLM mapping, approximately 16,265 acres)

**Stipulation:** No surface occupancy

No surface occupancy within core habitat area and adjacent buffer zones. In general, surface occupancy is allowed within 492 feet (150 meters) of existing roads as identified by BLM.

**Objective:** To protect portions of the remaining desert grassland community by minimizing habitat fragmentation.

**Previous Management:** General management guidance

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** The core areas of desert grassland habitat identified contain large blocks of grassland habitats important in the maintenance of desert grasslands and species that inhabit them. A stipulation of no surface occupancy is necessary to ensure that the remaining blocks of grasslands are not fragmented further. The areas in particular are two relatively large blocks of desert grassland habitat remaining in the region and particularly on public land.

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LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program – Stipulation Form  
No Surface Occupancy**

**RESOURCE CONCERN: Percha Creek Riparian Habitat Area**

**Location:** T. 22 S., R. 18 E., NMPM (approximately 276 acres)

**Stipulation:** No surface occupancy

**Objective:** To improve and protect this riparian area for wildlife habitat, watershed values, recreation, and visual quality

**Previous Management:** Case-by-case environmental analysis

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** Stipulating no surface occupancy is deemed necessary to protect this area from surface-disturbing activities. Closing the area to leasing is not considered necessary since impacts can be mitigated by requiring no surface occupancy.

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
No Surface Occupancy**

**RESOURCE CONCERN:** Lake Valley Historic Townsite

**Location:** T. 18 S., R. 07 W., NMPM (approximately 140 acres)

**Stipulation:** No surface occupancy

**Objective:** To preclude surface occupancy and new surface-disturbing activities within this recreational and cultural site

**Previous Management:** Existing cultural resources regulations

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** Stipulating no surface occupancy is deemed necessary to protect the townsite and schoolhouse, which are subject to existing cultural resource regulations since both are listed on the State Register of Cultural Properties (as Site LA 50088) and are eligible for inclusion on the National Register of Historic Places. Closing the Lake Valley Historic Townsite to leasing is not considered necessary since impacts from operations can be mitigated by requiring no surface occupancy.

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
No Surface Occupancy**

**RESOURCE CONCERN: Lone Butte**

**Location:** Section 6, T. 19 S., R. 09 E., NMPM (approximately 352 acres)

**Stipulation:** No surface occupancy

**Objective:** To protect cultural resources within the 352-acre area

**Previous Management:** 1986 RMP Decision C-4

**Waiver:** None

**Exception:** If an on-site investigation and surface use plan of operation demonstrates that surface occupancy can be confined to previously disturbed areas and can be accessed via existing roads.

**Modification:** None

**Justification:** Stipulating no surface occupancy is deemed necessary to protect cultural resources in accordance with existing BLM management. Off-road vehicle use also is limited to existing roads and trails on the approximately 300 acres in this area. Closing the area to leasing is not considered necessary since impacts from operations can be mitigated by requiring no surface occupancy.

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
No Surface Occupancy**

**RESOURCE CONCERN: Tularosa River**

**Location:** Sections 29, 31, 32, T. 13 S., R 11 E., NMPM (approximately 119 acres)

**Stipulation:** No surface occupancy (213 acres of acquired land not open to leasing)

**Objective:** To protect recreational opportunities along the Tularosa River

**Previous Management:** 1986 RMP Decision OGG-8, Tularosa Land Exchange

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** Stipulating no surface occupancy is deemed necessary to protect recreational opportunities along the river. Under standard lease terms and conditions, the same requirements apply. Closing the area to leasing is deemed overly restrictive in addition to the resource stipulations that would apply to this area.

**OPEN TO LEASING - CONTROLLED SURFACE USE AND TIMING  
LIMITATION**

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program – Stipulation Form  
Controlled Surface Use and Timing Limitation**

**RESOURCE CONCERN: Bighorn Sheep (New Mexico Endangered Species)**

**Location:** Sites with suitable habitat for bighorn sheep are located in the Caballo, Sacramento, Guadalupe, Brokeoff, and Cornudas Mountains. The Caballo Mountains provide a potential movement corridor for bighorn sheep from Fra Cristobal Mountains. (Approximately 199,020 acres)

**Stipulation:** Controlled surface use and timing limitation

No exploration or construction in important occupied habitat during lambing seasons (January through June).

**Objective:** To manage using reasonable measures necessary to protect potential habitat from degradation and to minimize adverse impacts on occupied habitat of bighorn sheep during lambing seasons (January through June).

**Previous Management:** General management guidance (special status species)

**Waiver:** May be granted if new habitat studies in coordination with BLM and New Mexico Department of Game and Fish conclude that an area is not affected by a proposed operation or is not being used as a lambing area by bighorn sheep.

**Exception:** May be granted if seasonal conditions are such that the bighorn sheep have moved out of and are not using the general area during a particular year.

**Modification:** None

**Justification:** Stipulating controlled surface use and timing limitation is deemed necessary to protect potential habitat from degradation and minimize potential impacts on occupied habitat of bighorn sheep, a New Mexico endangered species, during lambing seasons. Also, by stipulating controlled surface use and timing limitation and attaching it to a lease, the lessee is made aware of the requirements at the time the lease is acquired. Closing these areas to leasing or stipulating no surface occupancy is deemed overly restrictive since BLM allows other surface-disturbing activities within these areas. Under standard lease terms and conditions, activities can be delayed for only up to 60 days to avoid disturbance during the lambing periods which may not be sufficient to protect lambs.



**OPEN TO LEASING - CONTROLLED SURFACE USE**

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
Controlled Surface Use**

**RESOURCE CONCERN: Berrendo Administrative Camp Site**

**Location:** Section 9, T. 23 S., R. 15 E., NMPM (approximately 40 acres)

**Stipulation:** Controlled Surface Use

**Objective:** To protect an administrative camp site; no fluid minerals activities will be allowed within fenced area and within 350 feet (106 meters) of center of the helipad.

**Previous Management:** Public Land Order (PLO 6060), September 2, 1992; expires September 21, 2012

**Waiver:** None

**Exception:** None

**Modification:** May be granted to allow some activities if it is determined that there would be no adverse effect on administrative site facilities.

**Justification:** Controlled surface use is deemed necessary to avoid and protect BLM administrative site facilities (structure and helipad).

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
Controlled Surface Use**

**RESOURCE CONCERN: Highly Erosive or Fragile Soils**

**Location:** Various must confirm with BLM) (approximately 310,367 acres total)

**Stipulation:** Controlled surface use

Occupancy or use on fragile or highly erosive soils will be considered on a case-by-case basis. On those soils that are greater than 5 percent, mitigation measures may be applied (e.g., waterbars, reseeding, pad design changes, etc.)

**Objective:** To manage soils to maintain productivity and minimize erosion

**Previous Management:** General guidelines to manage soils in areas of high erosion potential to minimize surface disturbance to the extent possible

**Waiver:** None

**Exception:** None

**Modification:** May be granted if an on-site inspection demonstrates that these soils are not present on the specific site, slopes are low, and reclamation will be effective in mitigating impacts

**Justification:** Surface disturbance in these areas would cause accelerated erosion or increased instability, necessitating the stipulation of controlled surface use. Closing such areas to leasing or stipulating no surface occupancy is deemed overly restrictive due to the ability to mitigate impacts.

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
Controlled Surface Use**

**RESOURCE CONCERN: Watershed Areas**

**# Wind and Chess Draw Watershed Area**

**Location:** Rs. 25, 26 S., Rs. 13-16 E., NMPM (approximately 34,499 acres)

Note: A designated Area of Critical Environmental Concern (ACEC) is located within this area. The ACEC, which is highly valued for the habitat and scenic and recreational opportunities it contains, is closed to leasing in accordance with the Otero County ACEC Resource Management Plan Amendment (RMPA) (BLM 1997).

**# Mocassin and Otto Draw Watershed**

**Location:** Ts., 20, 21, S., Rs., 14, 15 E., NMPM (approximately 13,662 acres)

**# Watershed east of Tularosa and south of Tularosa River**

**Location:** Ts, 14, 15 S., Rs., 09, 10 E., NMPM (approximately 17,046 acres)

**# Three Rivers Watershed (north of Tularosa)**

**Location:** T. 11 S., Rs. 09, 9 ½ E., NMPM (approximately 12,741 acres)

**# Watershed east of Crow Flats**

**Location:** Ts., 24-26 S., Rs. 18, 19 E., NMPM (approximately 14,890 acres)

**Stipulation:** Controlled surface use

**Objective:** To protect watershed values in accordance with 1986 RMP Decisions

**Previous Management:** 1986 RMP Decisions W-1 W-2, W-3, W-4, and VR-3.

**Waiver:** None

**Exception:** None

**Modification:** May be granted (except in ACEC) if an on-site inspection demonstrates that resource values will not be jeopardized and reclamation will be effective in mitigating impacts.

**Justification:** Stipulating controlled surface use in the area other than the ACEC is deemed necessary for the remainder of the area to protect watershed values and ensure minimal effect on the integrity and long-term appearance of the area, including the scenic quality and opportunities for recreation. Closing the area to

leasing or stipulating no surface occupancy is deemed overly restrictive since the BLM allows other surface-disturbing resource activities within the area. Under standard lease terms and conditions and in accordance with RMP Decision W-1, ORV use would be limited to existing roads and trails.

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program – Stipulation Form  
Controlled Surface Use**

**RESOURCE: Big Game Habitat Areas**

# **Otero Mesa Habitat Area (pronghorn)**

**Location:** Ts. 21-26 S., Rs. 10-16 E., NMPM (approximately 427,275 acres)

# **Nutt and White Sands Antelope Areas (Jornada Plain)**

**Location:** Nutt Antelope Area is T. 19 S., Rs., 07, 08 W. NMPM (approximately 75,850 acres); White Sands Antelope Area is Ts., 10-17 S., Rs. 01-04 W. And 01, 02 E., NMPM (approximately 453,709 acres)

# **Caballo Mountains Deer Area**

**Location:** Ts. 14-17 S., Rs. 03, 04 W., NMPM (approximately 93,179 acres)

# **Sacramento Mountain Deer Area**

**Location:** Ts. 11-15, 17 S., Rs. 08-10 E., NMPM (approximately 170,275 acres) (The southern portion of this area coincides with the Sacramento Escarpment ACEC)

**Stipulation:** Controlled surface use

Operations will be designed to avoid known populations and habitat. Each exploration and development project will be scrutinized carefully for potential effects on species and habitat. New disturbance will be minimized to reduce loss, fragmentation of, and edge effect in the habitat (e.g., use of existing roads and utility corridors; minimization of cross-country placement of roads and utility corridors, pipelines, and other rights-of-way). High potential for timing limitations and other conditions of approval resulting from BLM analysis.

**Objective:** To protect adequate habitat for big game species.

**Previous Management:** 1986 RMP Decisions WL-4, WL-8, WL-5, and WL-6.

**Waiver:** May be granted if new habitat studies in coordination with the BLM and New Mexico Department of Game and Fish conclude that the habitat area would not be affected by a proposed operation or the area is no longer used as a habitat by big game.

**Exception:** May be granted if no new roads or utility corridors are required.

**Modification:** None

**Justification:** To ensure that adequate habitat for big game is maintained in this area, stipulating controlled surface use is deemed necessary to maximize use of existing roads and/or utility corridors in order to maintain integrity of the habitat area and minimize the potential for further fragmentation. Closing the area to leasing or stipulating no surface occupancy is deemed overly restrictive since the BLM allows other surface-disturbing activities within the area. Under standard lease terms and conditions, the requirements described above would be the same; however, the stipulation for controlled surface use informs the lessee of the resource concern at the time the lease is acquired.

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program – Stipulation Form  
Controlled Surface Use**

**RESOURCE CONCERN:** Special Status Species Habitat (Federally listed threatened and endangered species, species proposed for Federal listing, Federal candidates, BLM sensitive species, and State-listed species)

**Location:** Various (must confer with BLM and U.S. Fish and Wildlife Service)

**Stipulation:** Controlled surface use

All exploration and development activities will follow current requirements of Section 7 of the Endangered Species Act for Federally listed and proposed species, and current BLM policy for management of State-listed and BLM sensitive species. Operations will be designed to avoid known populations and potential habitat. Each exploration and development project will be scrutinized carefully for potential effects on species and potential habitat. High potential for timing limitations and other conditions of approval resulting from BLM analysis.

**Objective:** To avoid adverse impacts on individual species and associated habitats.

**Previous Management:** Endangered Species Act, New Mexico Plant Species Act (9-10-10 NMSZ) and attendant Regulation 19 NMAC 21.2, Wildlife Conservation Act (NMSA 17-2-37 through 17-2-46, general management guidance

**Waiver:** May be granted if new studies conclude that the areas are no longer used as habitat for those species.

**Exception:** None

**Modification:** None

**Justification:** Stipulating controlled surface use is deemed necessary to minimize adverse impacts on protected species and their habitats, as required under the Endangered Species Act, New Mexico Plant Species Act (9-10-10 NMSZ) and attendant Regulation 19 NMAC 21.2, Wildlife Conservation Act (NMSA 17-2-37 through 17-2-46, and BLM authority. Closing these areas to leasing or stipulating no surface occupancy is deemed overly restrictive since the BLM allows other surface-disturbing activities within the area. Under standard lease terms and conditions, the requirements described above would be the same; however, the stipulation for controlled surface use informs the lessee of the resource concern at the time the lease is acquired.



**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
Controlled Surface Use**

**RESOURCE CONCERN: Jarilla Mountains**

**Location:** T. 20 S., R. 08 E., NMPM (approximately 803 acres)

**Stipulation:** Controlled surface use

New disturbance will be minimized as follows:

# Travel will be restricted to existing roads and trails

High probability of cultural resources mitigation requirements (implemented through Notice(s) to Lessees)

**Objective:** To minimize the high probability of cultural resources mitigation requirements

**Previous Management:** 1986 RMP Decision C-5

**Waiver:** None

**Exception:** If an on-site investigation and surface use plan of operation demonstrates that surface occupancy can be confined to previously disturbed areas and can be accessed via existing roads.

**Modification:** A modification may be implemented if an on-site investigation concludes that cultural resources do not exist in the area proposed for operations; however, there is a high probability that mitigation of impacts on cultural resources would be required. In addition, additional modifications may be implemented if significant cultural sites are identified in the area.

**Justification:** Stipulating controlled surface use is deemed necessary to ensure that impacts on cultural resources will be minimal and mitigatable. Also, off-road vehicle use is prohibited on approximately 705 acres in this area. Closing the area to leasing or stipulating no surface occupancy is not considered necessary since impacts can be anticipated and mitigated by requiring controlled surface use.

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**Fluid Minerals Program - Stipulation Form  
Controlled Surface Use**

**RESOURCE CONCERN:** Designated Historic Trails (Mormon Battalion, Butterfield, and Jornada del Muerto)

**Locations:** Mormon Battalion Trail - Ts. 18, 19 S., Rs. 05-07 W., NMPM (approximately 17,724 acres); Butterfield Trail - Ts. 25, 26 S., Rs. 12-14 E., NMPM (approximately 4,333 acres); Jornada del Muerto Trail - Ts. 13-20 S., Rs. 01, 02 W., NMPM (approximately 14,018 acres)

**Stipulation:** Controlled surface use

New disturbance will be minimized as follows:

- # No surface-disturbing activities within 0.25 mile (400 meters) from each side of the trails (entire length)
- # Existing disturbance points could be used to cross the trails

**Objective:** To provide protection for existing cultural and scenic values associated with these trails

**Previous Management:** Protection of Mormon Battalion Trail through existing cultural resources regulations. Butterfield Trail protected by RMP Decision C-6 and Jornada del Muerto Trail protected by 1986 RMP Decision C-7. These decisions stipulate no surface disturbance within 0.25 mile (400 meters) of well-preserved sections of trail.

**Waiver:** None

**Exception:** Granted if it is demonstrated in a surface use plan of operations that no surface-disturbing activities will be visible from the trails, and that existing disturbed points/areas would be used to cross the trail

**Modification:** None

**Justification:** Stipulating controlled surface use is deemed necessary to minimize impacts on cultural resources. Closing the trails to leasing or stipulating no surface occupancy is not considered necessary since impacts can be mitigated by requiring controlled surface use.

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**Fluid Minerals Program - Stipulation Form  
Controlled Surface Use**

**RESOURCE CONCERN: Visual Resource Management (VRM) Class II Areas**

**Location:** Various (must confer with BLM)

**Stipulation:** Controlled surface use

New disturbance will be minimized as follows:

- # Short-term impacts allowed as long as the longer-term impacts (one year) are consistent with the VRM Class II objectives
- # Reclamation must occur as soon as possible
- # Conditions of approval will be imposed such as paint color, judicious siting, and maximize use of existing roads and utility corridors
- # Directional drilling may be required with multiple wells drilled from one pad

**Objective:** To minimize contrasts to the characteristic landscape of each area.

**Previous Management:** BLM VRM objectives

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** Stipulating controlled surface use is deemed necessary based on the need to protect visual resources in these areas. Closing these areas to leasing or stipulating no surface occupancy is deemed overly restrictive since the BLM allows other surface-disturbing activities within these areas.

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**Fluid Minerals Program - Stipulation Form  
Controlled Surface Use**

**RESOURCE CONCERN: VRM and ORV Limited Areas**

**# Cornudas Mountains VRM and ORV Limited Area**

**Location:** Ts. 25, 26 S., Rs. 13-15 E., NMPM (approximately 2,533 acres)

**# Cuchillo Mountains VRM and ORV Limited Area**

**Location:** T 12 S., R. 11 W., NMPM (approximately 5,947 acres)

**# Brokeoff Mountains VRM and ORV Limited Area**

**Location:** Ts. 24-26 S., Rs. 18, 19 E., NMPM (approximately 11,647 acres)

**Stipulation:** Controlled surface use

New disturbance will be minimized as follows:

- #** Short-term impacts allowed as long as the longer-term impacts (one year) are consistent with the visual resource management (VRM) objectives
- #** Reclamation must occur as soon as possible
- #** Conditions of approval will be imposed such as paint color, judicious siting, and using existing roads and utility corridors

NOTE: Within this area, the Cornudas, Alamo, and Wind Mountains have been designated as ACECs and are closed to leasing.

**Objective:** To protect watershed values and visual resources

**Previous Management:** 1986 RMP Decisions W-1 and VR-3, VR-4, and VR-2

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** Stipulating controlled surface use is deemed necessary for these areas to protect watershed values and ensure minimal effect on the integrity and long-term appearance of the area, including the scenic quality and opportunities for recreation. Closing these areas to leasing or stipulating no surface occupancy is deemed overly restrictive since the BLM allows other surface disturbing resource activities within the area.

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**Fluid Minerals Program - Stipulation Form  
Controlled Surface Use**

**RESOURCE CONCERN: Cuchillo Mountains Piñon Nut Collection Area**

**Location:** Ts. 10-12 S., Rs. 07, 08 W., NMPM (approximately 14,863 acres)

**Stipulation:** Controlled surface use  
Avoid destruction of piñon pine trees within this area

**Objective:** To maintain the current use of the stands of piñon pine trees as a public and commercial nut collection area

**Previous Management:** 1986 RMP Decision R-2

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** Stipulating controlled surface use is deemed necessary to ensure continued use of the nut collection area. Closing the area to leasing or stipulating no surface occupancy is deemed overly restrictive since the BLM allows other surface-disturbing activities within these areas.

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**Fluid Minerals Program - Stipulation Form  
Controlled Surface Use**

**RESOURCE CONCERN: Lake Valley Back-country Byway**

**Location:** Ts. 15-19 S., Rs. 05-07 W., NMPM (approximately 15,039 acres)

**Stipulation:** Controlled surface use

New disturbance will be minimized as follows:

- # Surface-disturbing activities will be minimized within 0.25 mile (400 meters) of each side of the Byway, and long-term impacts will be consistent with visual resource management (VRM) objectives for the Byway
- # Conditions of approval will be imposed such as paint color, judicious siting, etc.

**Objective:** To protect the scenic resources along the Byway

**Previous Management:** Case-by-case evaluation of proposed actions along the Byway corridor

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** Stipulating controlled surface use is deemed necessary to protect visual resources along the Byway. Closing the area along the Byway to leasing is deemed overly restrictive since the BLM allows other surface-disturbing activities within these areas.

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**Fluid Minerals Program – Stipulation Form  
Controlled Surface Use**

**RESOURCE CONCERN: Nominated Areas of Critical Environmental Concern (ACEC)**

**# Brokeoff Mountains Nominated ACEC**

**Location:** T. 25 S., R. 19 E., NMPM (approximately 3,834 acres)

**# Caballo Mountains Nominated ACEC**

**Location:** T. 16 S., Rs. 03, 04 W., NMPM (approximately 2,213 acres)

**# Jarilla Mountains Nominated ACEC**

**Location:** Ts. 21, 22 S., R. 08 E., NMPM (approximately 7,032 acres)

(Note: A portion of the area is closed to off-road vehicle use on approximately 705 acres to protect cultural resources, 1986 RMP Decision C-5)

**# Mud Mountain Nominated ACEC**

**Location:** T. 13 S., Rs. 04, 05 W., NMPM (approximately 2,580 acres)

**# Percha Creek Nominated ACEC**

**Location:** T. 16 S., R. 07 W., NMPM (approximately 940 acres)

**# Sacramento Mountains Nominated ACEC**

**Location:** Ts. 13, 14 S., R. 11 E., NMPM (approximately 2,381 acres)

**# Six Shooter Canyon Nominated ACEC**

**Location:** T. 25 S., Rs. 21, 22 E., NMPM (approximately 1,060 acres)

**# Pup Canyon Nominated ACEC**

**Location:** T. 22 S., R. 18 E., NMPM (approximately 3,678 acres)

**Stipulation:** Controlled surface use

Operations will be designed to avoid known populations and for habitat. Each exploration and development project will be scrutinized carefully for potential effects on species and/or habitat. High potential for other conditions of approval resulting from BLM analysis.

**Objective:** To protect the known and/or potential biological communities at each.

**Previous Management:** Case-by-case environmental analysis

**Waiver:** None

**Exception:** None

**Modification:** None. Additional modifications and conditions of approval may be implemented if this area is designated as an ACEC.

**Justification:** Stipulating controlled surface use is deemed necessary based on the stipulations associated with the other resource concerns needed to protect the resource values in the area. Closing the area or stipulating no surface occupancy is deemed overly restrictive since the BLM allows other surface-disturbing activities within the area. Under standard lease terms and conditions, the requirements described above would be similar; however, the stipulation of controlled surface use informs the lessee of the resource concern at the time the lease is acquired.



**OPEN TO LEASING - TIME LIMITATION**

**BUREAU OF LAND MANAGEMENT  
LAS CRUCES FIELD OFFICE**

**Fluid Minerals Program - Stipulation Form  
Timing Limitation**

**RESOURCE CONCERN:** White Sands Missile Range Safety Evacuation Zone

**Location:** Ts. 10-17 S., Rs. 01, 02 E. and 01 W., NMPM (approximately 311,410 acres)

**Stipulation:** Timing limitation

**Objective:** To provide protection to the public on days when missiles will be fired

**Previous Management:** 1986 RMP Decision OGG-1

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** To ensure that the area will be restricted during missile firings. Closing the area to leasing or stipulating no surface occupancy is deemed overly restrictive since the area is viable for fluid minerals development during other times. Prior to beginning exploration activities, the lessee must contact the Corps of Engineers in Albuquerque and the Master Planning Branch at White Sands Missile Range to be advised of the terms of the safety evacuation agreement and missile-firing schedules. Under standard lease terms and conditions, the requirements posed by this stipulation would remain the same.

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**Fluid Minerals Program - Stipulation Form  
Timing Limitation**

**RESOURCE CONCERN: Red Sands Off-road Vehicle (ORV) Area**

**Location:** Ts. 19-21 S., Rs. 08, 09 E., NMPM (approximately 33,600 acres)

**Stipulation:** Timing limitation

New disturbance will be minimized as follows:

- # No seismic operations or drilling on weekends and for one week each year when the annual motorcycle race takes place

**Objective:** To protect the existing opportunities for recreational off-road vehicle (ORV) use and minimize the effects of fluid mineral development activities

**Previous Management:** Case-by-case evaluation of proposed actions within the ORV area. Also see Community Pit 7.

**Waiver:** None

**Exception:** None

**Modification:** None

**Justification:** Stipulating the timing limitation is deemed necessary to minimize impacts on recreational activities that occur in this area. Closing the area to leasing, or stipulating no surface occupancy or controlled surface use, is deemed overly restrictive because recreation in this area would not be impacted significantly by activities during weekdays.